



THE RESOURCE

STATE OF
THE CIO
2005

HOW TO BE STRATEGIC IN THE REAL WORLD

OUR SPECIAL REPORT BEGINS ON PAGE 42

Up Close and Professional With

- » The \$1.5 Billion CIO
- » The Man in the Middle
- » The Public Servant

Exclusive Research:

- » How CIOs Lead Innovation
- » The State of the Global CIO

PLUS

COMPARE YOURSELF TO THE IDEAL CIO JOB SPEC

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Every day, Verizon CIO SHAYGAN KHERADPIR thinks about "how can we go there faster. Every night, I think we can do more, do more, do more."

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Robert Fort
Director of IT, Virgin Entertainment Group, North America

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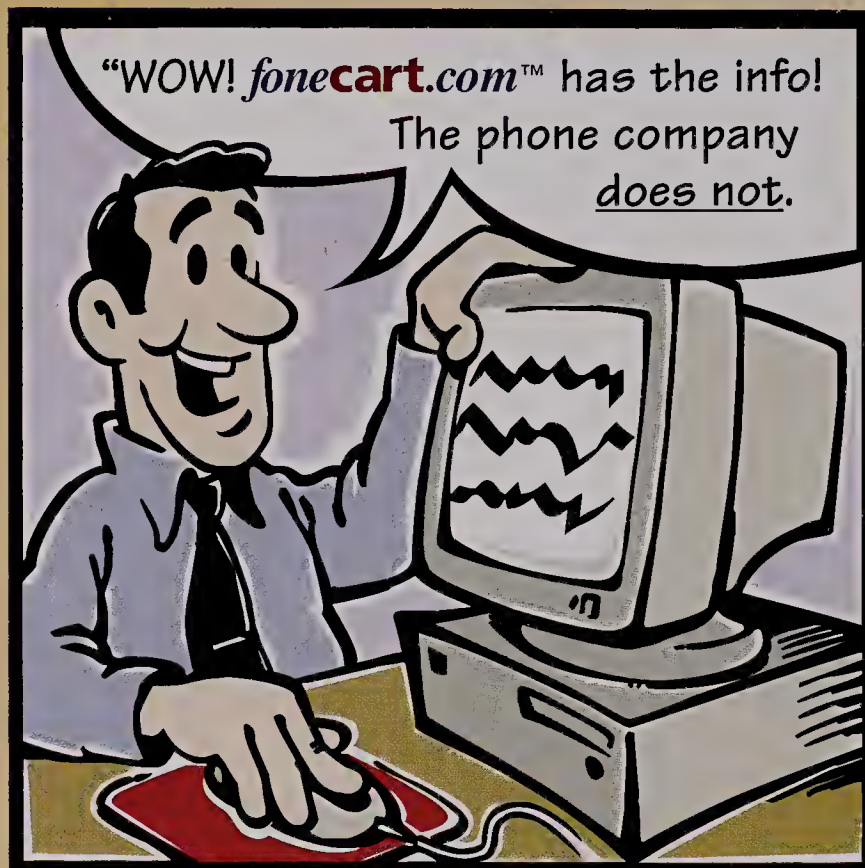
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THE STATE OF THE CIO 2005

Three CIOs, three challenging environments, three strategic agendas. For a reality check of what it takes to innovate in 2005, we spent time with (from top to bottom) SHAYGAN KHERADPIR at Verizon, KEN ERDNER at Old Dominion Freight Lines and ROBERT TAYLOR in Fulton County, Ga.



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INNOVATION: FULL DISCLOSURE | CIO.COM

Learn how CIOs can best allocate their innovation dollars in our "IT-Innovation Survey" at www2.cio.com/research. Also see more insights on how IT drives business innovation in the new "Special Report: Innovation." Find the link at www.cio.com/040105.

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The Real and Ideal

It's great to set stretch goals that help us grow—as long as we understand that perfection is not attainable

I've been thinking a lot lately about the difference between the ideal and the real.

While CIOs—universally under pressure—recently have been asking us to inspire them by providing more encouraging stories about IT's positive impact on the enterprise, we're pretty sure that what you *don't* want are sugarcoated, idealized pictures set in a world that no living, breathing executive would ever recognize. While too many dark stories of projects gone awry or spending getting out of control will make readers cringe, puffed-up tales of technological derring-do are equally demoralizing. What's wrong with me? they may make you ask. Why can't I be as wonderful as that guy? (As the mother of two teenage daughters, I witness this collision of private reality and public hype every day.)

This is not to say that the ideal doesn't have its place. Defining an ideal can help the seeker to set goals, to stretch—as long as it's understood that the ideal is not actually attainable and that the reality (the good, the bad and the ugly) is the ocean in which we swim every day.

That's the setting for this special look at the state of the CIO. We wanted to take everything we've learned from poring over our research of the past year, along with hundreds of in-person interviews, and filter it through our 17 years of reporting on the CIO position to create the ultimate and definitive description of the CIO role. At the same time, we wanted to show, in a very real and human way, what life is really like for three very different CIOs (please see "State of the CIO 2005: Reality Check," Page 42).

In the process, we explode some stereotypes. For instance, CIOs at technology-driven, richly funded companies don't spend all their time in a corner office plotting strategies; they also work incredibly long hours and personally wrestle problems to the ground on a daily basis. On the other hand, public-sector CIOs indeed are resource-constrained, but they're under just as much pressure to innovate as any private-sector IT exec. And midsize companies that compete for business against industry leaders will settle for less at their own peril when it comes to leveraging IT.

To tie together the ideal and the real, we've created a self-assessment tool so that you can compare yourself to our ultimate job spec. And knowing that few will achieve a perfect score, we've included tips for improving your situation, with links to related articles from the *CIO* archives.

No one's perfect, but that's to be expected. There's always room for improvement. And that, in reality, is not a bad thing.

CIOs recently have been asking us to provide more encouraging stories about IT's positive impact on the enterprise.

Abbie Lundberg, Editor in Chief
lundberg@cio.com

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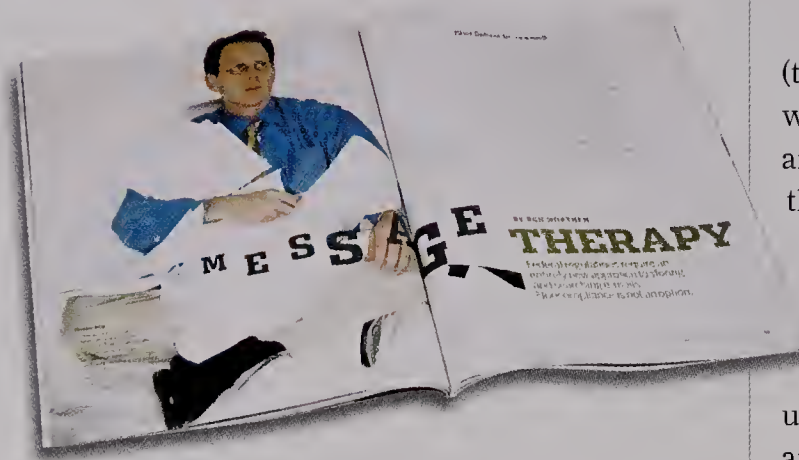
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InBox



E-Mail Archiving

I enjoyed "Message Therapy" (Jan. 15). However, the proposed solution creates new exposure for a company. As the article notes, lawyers love e-mail. And today's management of records retention does not properly address e-mail stored on a backup medium; messages purged by individuals or the system due to corporate retention policy are often not removed from backup tape.

This would be the same issue with any incoming or outgoing archive system. E-mail on backup tape or the archive system would be open to discovery in legal situations. Worse yet, an automatic archiving system for incoming and outgoing e-mail could be keeping messages that the recipient decided to delete soon after receipt, making such messages available for electronic discovery when they otherwise would not be available in such instances. If the archive system could sync with the individual's mailbox for deletion and purging, that would address the concerns I have noted.

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"Build Once, Use Many"

Thank you for both stating that informed decision making (that is, IT simplification) handily beats ignorant action

(that is, blindly cutting IT budgets), as well as for providing many perspectives and analogies to illustrate and support this concept ("Prune IT Systems, Not Budgets," Jan. 15). Governments—similar to other large bureaucracies in which the financial and management aspects are too far removed to understand technology's frontline value and have yet to adopt the architect's role of master planner—are perfect case studies for such shortsighted blunders.

Your presentation is timely as our office begins to drive Colorado government toward a new culture of operational analysis using enterprise architecture (shared infrastructure) and performance management (customer-service metrics). When you say, "Don't cut 10 percent of the IT budget; cut 10 percent of the IT systems," I think it is critical to also make clear that this refers to cutting both the quantity and the size of IT systems.

Even those IT systems that are not entirely cut should be blown apart into separate, basic components (interface, business rules, data) so that redundancy at this level of granularity also can be eliminated by taking advantage of common or shared services (portal, ID management, data stores, payment engine and so on). Decision makers should realize that architects' "build once, use many times" strategy offers the flexibility of reusing both IT systems and individual system components.

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Dell Clarifies

In "Innovation Ships Out" (Jan. 15), Christopher Koch reports that Dell does not design or manufacture its own note-

books. This is not true. While we do work with third-party companies in some areas of design, Dell engineers own the design process of its systems. Dell does not manufacture motherboards or system cases.

We do, however, have companies produce these components based on our specifications. These companies are suppliers to Dell, just like a processor or a hard-drive company. Dell builds all of its notebooks at its factory in Penang, Malaysia. For U.S. customers, orders are built and shipped by Dell from Malaysia to one of three Dell-owned and -operated fulfillment centers. It's wrong to say that Dell never touches a customer notebook order.

In the sidebar, Koch includes Dell in a list of companies that "outsource most, if not all, of the design and manufacturing of some of their products." Dell designs all of its products and manufactures all but printers and PDAs.

At Dell, we view our ability to manufacture our products efficiently as a competitive differentiator.

LIONEL MENCHACA
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Executive Editor Christopher Koch replies:
I was incorrect to say that Quanta "drop-ships" laptops directly to Dell customers. Dell receives and handles shipping for those computers itself. I was also incorrect to say Dell outsources digital camera manufacturing. Dell does not sell digital cameras. I apologize for these errors.

What Do You Think?

Send your thoughts and feedback to letters@cio.com. Letters may be edited for length or clarity. For a link to the articles mentioned, go to www.cio.com/040105.

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anyone know the
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trendlines

EDITED BY MEGAN SANTOSUS

NEW * HOT * UNEXPECTED

E-Gov Hits a Snag

GOVERNMENT A uniquely Washington, D.C., phenomenon played itself out this winter: Several reports proclaiming the success of a government reform plan—specifically electronic government—were released. But many experts in the know continue to question the success of the reform effort; such insiders worry that when it comes to a truly digital government that could save money and streamline operations, there exists a decided lack of direction and interest.

Within weeks, four unrelated reports claimed in varying degrees the progress that the federal government has made in creating an electronic government. “The American Customer Satisfaction Index E-Gov Report,” conducted by ForeSee Results for the University of Michigan,

reported in December that Americans’ satisfaction with government websites showed a “steady increase” from the third quarter to the fourth quarter of 2004. Then, the Office of Management and Budget (OMB) in the White House declared in its report “Expanding E-Government” that “...the federal government is delivering results through expansion and adoption of electronic government principles...” Up next, The U.S. Government Accountability Office issued a report concluding that federal agencies had, for the most part, met the requirements of the E-Gov Act of 2002—such as creating websites for federal courts. Finally, Input, a market research company, released a report saying that spending on e-government (defined as “any

Continued on Page 22

Something Wiki This Way Comes

END USER DEVELOPMENT

In Hawaiian, “wiki wiki” means “quick.” In IT speak, a wiki is a website that lets anyone quickly add or edit content. The concept began small, as a grassroots way to build online knowledge repositories (such as Wikipedia.org). But now startups such as JotSpot are out to harness the power of wikis for businesses. JotSpot’s wiki-based software lets companies create wikis for business processes.

Opsware, a data center automation

software vendor, has used JotSpot to create in a few hours applications that might have cost \$50,000 to \$100,000 to develop in Java. Although JotSpot’s pricing hadn’t been finalized at press time, it’s expected to cost around \$5 per user per month. Opsware’s technical sales team uses one JotSpot wiki to manage information such as proposals and status reports associated with pilot projects for prospective customers. “It’s a very rich document management

system,” says Jason Rosenthal, vice president of client services at Opsware. “It’s so quick and easy that a new user can learn to use it in 10 to 15 minutes.” The software also reduced the time it took the company to prepare for a proof of concept from five days to three, Rosenthal claims, adding that wikis will revolutionize how companies share information internally. Says Rosenthal, “it’s easier for new users to do what it used to take a webmaster to do.”

—Alice Dragoon



Time or Money?

COMPENSATION In a poll of 4,600 people, 39% said they would rather have more time off than a \$5,000 increase in annual salary.

SOURCE: Salary.com

Flight Info on Autopilot

WIRELESS COMMUNICATIONS Until late last year, passengers flying out of Fresno Yosemite International airport had to work hard to get flight information. In order to check their flight's status, they had to line up at the counter to ask already hassled airline staff. "The situation was putting a real strain on the staff here and making passengers miserable," says Patti Miller, the airport's air service and marketing manager.

In November, the Fresno airport became the first in the country to use a Web-based wireless system to display real-time flight information from radars—rather than airline staff—at electronic kiosks in the airport. And in February, the radar flight information went live on the airport's website (www.flyfresno.org), allowing passengers to check a flight's status from home.

At most large metropolitan airports, dominant carriers usually run the flight information display systems, and airline staff provide regular updates. But as major airlines face increasing economic pressure, many are falling behind on the task. And at the country's smaller regional airports, the role of information provider is falling to the airport itself. Building data links to carriers to provide accurate flight information is often too expensive, however. The result is that information is either delayed or never updated.

After looking into systems that cost as much as \$500,000, Fresno chose a system from Megadata called Passur Flightlink, which delivers flight information via the Web. The airport invested \$139,000 for installation and hardware, and pays a \$15,000 yearly subscription. Megadata, which hosts the software, operates its own network of radar around the country that can independently track flights. Staff at Fresno airport can log on and update the system whenever they want, but the system can run on its own. Says Miller: "That's important when airport and airline staff is limited."

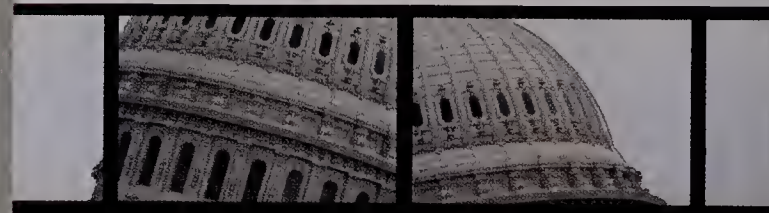
—Susannah Patton

Airline	Flight	From	Time	Status
American	631	Dallas-Ft. Worth	1:53p	On Time
SkyWest	4475	Denver	12:59p	On Time
United Express	6017	Los Vegas	3:36p	On Time
Continental	8948	Los Angeles	12:34p	On Time
United Express	6055	Los Angeles	12:34p	On Time
United Express	6057	Los Angeles	12:48p	On Time
Delta	6021	Los Angeles	2:15p	On Time
Am West Express	6017	Los Angeles	2:21p	On Time
Am West Express	6019	Phoenix	11:57a	On Time
SkyWest	3916	Salt Lake City	3:02p	On Time
SkyWest	6416	San Francisco	11:20a	On Time
SkyWest	6199	San Francisco	12:07p	On Time
SkyWest	6200	San Francisco	2:07p	On Time
United Express	6056	Visalia	1:32p	On Time

Welcome to Fresno Yosemite International Airport
The white curb is for loading and unloading only.

E-Gov Hits Snag

Continued from Page 21



information system that performs a mission-oriented function") would increase from \$4 billion in FY04 to nearly \$6 billion in FY09.

Dig deeper into the ongoing dialogue, and a different picture begins to emerge. While e-government initially made some progress in 2001 and 2002, it has yet to meet the expectations of fundamentally improving government operations. For sure, Americans can file taxes, reserve a camping site and buy Treasury bills online. And some cross-government systems have been developed to consolidate government services in numerous agencies, such as filing electronic grant proposals. But most e-gov experts agree: E-gov has hit a lull.

What's happened? It's always easy to point to a shortage of money. But for e-government, a lack of money is an understatement. In his first term, President Bush set a benchmark of \$100 million over three years to fund e-government projects. The E-Gov Act of 2002, which set out basic requirements for e-government, called for \$345 million over the next five years. Yet Congress delivered only \$5 million in FY03, \$3 million in FY04 and just \$5 million in FY05.

But others say the e-government malaise is the result of government itself. The next generation of e-gov projects, which mostly involve sharing information across agencies, could transform government services. But such projects require data integration across agencies, a prospect that's not easy, warns Mark Forman, the former top federal e-government and IT executive at the OMB and now executive vice president of worldwide services for Cassatt, an operations automation products company. Agencies tenaciously guard the use of their information, and cajoling them to share may take years. Add to that privacy issues, and you have major roadblocks to overcome. Says

Forman: "These are tough cultural issues, and it's what is holding up e-gov."

—Allan Holmes

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THE NEW CURRENCY AT THE LUNCH LINE

BIOMETRICS For many students in the Penn Cambria public school district, misplaced milk money is a problem of the past. Since 1999, the school district, located near Pittsburgh, has been using biometric fingerprint scanning technology from Food Service Solutions to streamline cafeteria service for the district's 1,800 students. Brenda Bucynski of Penn Cambria's food services office says the fingerprint scanning units located in school cafeterias throughout the district expedite lunch lines and grant anonymity to students who are enrolled in free or reduced-cost lunch programs. For parents, the convenience of fingerprint

scanning is twofold: They can prepay for lunches and see what their kids are buying; transaction histories let parents know whether their kids are buying sloppy joes or Scooter Pies.

Once students have debit accounts set up, system registration takes about one minute per student. After a fingerprint is scanned by a small unit, software creates a template from a grid of 27 intersection points based on the swirls and arcs of a student's fingerprint. Food Service Solutions says scanned fingerprints cannot be used by law enforcement for identification purposes because the fingerprint itself is not stored on the system. The fingerprint



That will be one index finger, please: Thousands of public school students pay for lunch by using their fingerprints rather than reaching for their wallets.

map that is created at registration is stored as a mathematical algorithm, and the fingerprint image is discarded after each use; only the template with the corresponding 27 intersection points remains.

The technology is currently used in 45 public school districts. Two college campuses also use fingerprint scanning to replace the traditional ID cards. Bucyn-

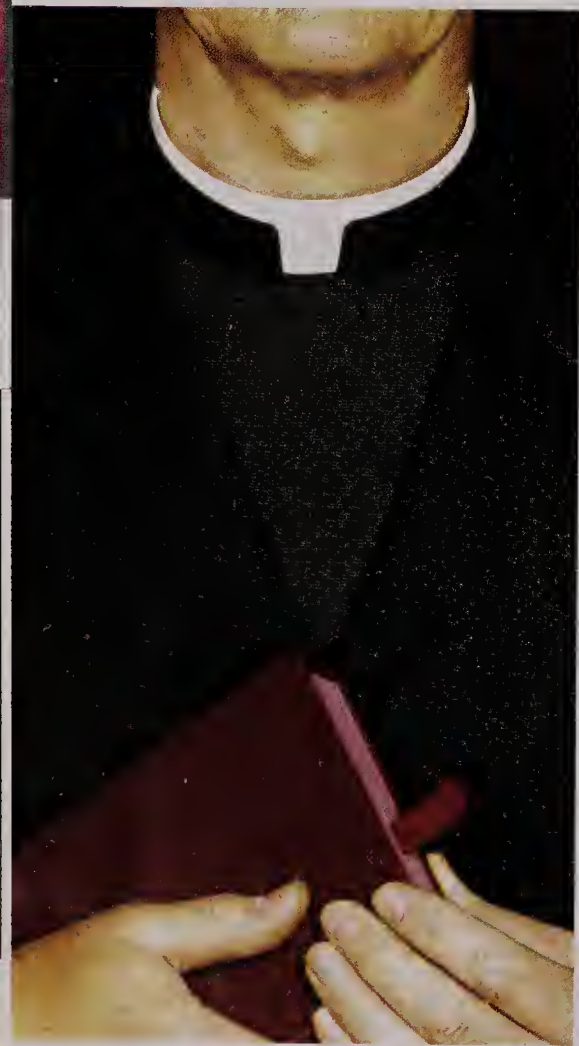
ski says Penn Cambria decided to use biometrics "to set parents' minds at ease." In the past, high schoolers would use lunch money to buy other things, such as cigarettes. For elementary schools, biometrics has enabled teachers to spend less time collecting money and handing out lunch tickets, a process that took as much as a half-hour each day. —Margaret Locher

Positions Wanted: Combustible Clergy; Gibberish Therapist

CAREERS Looking for a fire-breathing minister to officiate your wedding? How about a therapist who can teach you the art of improvisational gibberish? If you can't find either one in the Yellow Pages try Tribe.net, a San Francisco-based website where some 500,000 unique visitors go each month to find a job or roommate, make friends, sell stuff or solicit bizarre services.

The 20-person operation launched in the fall of 2003, and shares similarities with Craigslist, a widely successful Web classifieds and community site that also got its start in the Bay Area. Visitors who are familiar with Craigslist's no frills design will recognize Tribe.net's similar bare-bones user interface of mostly text links. Another similarity is that Tribe.net, like Craigslist, does not rely on advertising-related revenue. What's different from Craigslist, though, is that Tribe.net users can attach a profile to their posts, letting visitors know a little something about them. According to Wade Lagrone, vice president of marketing at Tribe.net, the profiles help build trust among users and foster a stronger sense of community by reducing anonymity. Posting a profile requires free registration, and Tribe.net claims to have about 200,000 members who have formed some 25,000 "tribes," or discussion groups. Tribe.net is available in 40 cities in the United States, although it is most popular on the West Coast, Lagrone says. Venture-backed tribe.net eventually plans to make money by charging commercial businesses for job listings, which number in the thousands. But the "outrageous" job postings, which launched in January, will remain free. That may be a good strategy considering some of the offerings. Would you pay a guy who specializes "generally in bringing property values down" \$20 an hour plus expenses to bug your uptight neighbors?

—Jon Surmacz



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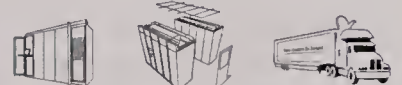
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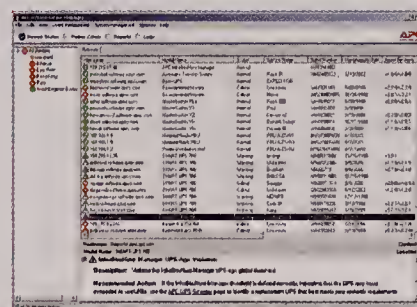


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Highway Helper

INFRARED SCANNING For a few months last year, the Ohio State Highway Patrol had more eyes on the highways. The additional “eyes” were actually part of a new infrared scanning system that examined the license plates of vehicles traveling on the 241-mile long Ohio Turnpike.

The premise behind the Automatic Plate Recognition (APR) system is to use technology to nab stolen cars. The system scans license plates in two ways: as vehicles pay tolls or as patrol cars equipped with roving scanners drive along the highway. In the pilot that took place in Ohio, scanned license plate numbers were matched with plate numbers logged into the state’s crime database. Based on the National Crime Information Center’s (NCIS) database, Ohio’s database includes plates for stolen vehicles and for fugitives wanted across the country.

During the pilot conducted from August 2004 to November 2004, the Ohio State Highway Patrol apprehended 23 criminal suspects and recovered 24 stolen vehicles valued at \$221,000—a 50 percent spike in auto theft recoveries on the highway compared to the same time frame the year before.

The system is not without its shortcomings. Since it simply scans for characters and not patterns, it cannot recognize what state a plate is from or any other distinguishing vehicle characteristics. Thus, a trooper who receives an alert of a possible stolen vehicle while on patrol has many possible plate permutations and vehicle types to sort through while searching for the suspect.

Another issue: “false positives.” If a Florida plate is wanted, yet a plate from Pennsylvania has the same characters, a trooper could stop the wrong person. (A trooper first looks for characters that match, and then checks the NCIS database to confirm whether or not the suspect in question has been pulled over.) “That’s a problem,” says Jeff Gamso of the Ohio American Civil Liberties Union. Gamso also noted that NCIS information is not always 100 percent accurate. “If I’m pulled over due to faulty NCIS information, I’m not likely to be let go in five minutes.”

According to Sgt. Joe Luebbers, the highway patrol is aware of such issues and has put safeguards in place. “Confirmation is a key part of our process. When we stop someone, we contact the agency that put the plate into the database to verify that this is the car or the person they want,” he says. Even so, Gamso worries about the “incremental invasion of privacy.” If used correctly, APR simply extends what the highway patrol already does. If the information is faulty or abused, however, it represents more than an inconvenience.

With a successful pilot completed, the highway patrol is awaiting funding from the Ohio Controlling Board to roll out APR statewide.

—Jeff Vance

The Shipping News

ON THE MOVE Logistics providers UPS and DHL have witnessed changes among their CIO ranks lately.

Ron Kifer was promoted to CIO for DHL Express Europe and is now based in Brussels. Kifer most recently served as vice president of program and solutions management for DHL Americas, where, among other responsibilities, he built the company’s program management office and led software development within the Americas.

At UPS, **David Barnes** succeeded Kenneth Lacy as senior vice president and CIO on Jan. 3, 2005. So what can Brown do for Lacy now? Deliver the guy a nice retirement package after his 37 years of service.



David Barnes
senior vice president
and CIO at UPS



Mark Popolano
CIO American
International Group

Notably, Lacy and Barnes have similar backgrounds with UPS: They both started out in low-level positions (Lacy as a clerk and Barnes as a package loader) and worked their respective ways up the corporate ladder while pursuing college degrees. Lacy must have seen a bit of himself in Barnes when he named him as his successor. Lacy, 56, joined the company at the ripe old age of 18 as a clerk and never strayed. Barnes, too, is a lifer (at least thus far). At 48, he’s already clocked 27 years of service.

The IT department at Freddie Mac has also seen its share of changes. **William Ledman**, 56, retired as senior vice president of special projects technology on April 1, 2005, four months after **Joseph Smialowski** was hired as executive vice president of technology and operations. In January, Smialowski appointed James Witkins, 54, to replace Ledman.

At American International Group (AIG), CIO **Mark Popolano** has received a pair of accolades recently. In December, consultancy Bearing Point and *Forbes* magazine honored him with a Compass award for championing a global voice and data network infrastructure. In January, Popolano was elected to succeed Lawrence English as AIG’s senior vice president of administration while continuing to serve as CIO.

—Meridith Levinson

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Show Them How

Even perfect execution won't lead to perfect IT. You must encourage business users to develop some IT smarts of their own.



You have probably noticed the recent research and magazine articles about “the agile IT organization.” Agile is a great word for IT because it speaks to the core IT issues of “too little, too late, for too much.” To be agile is to have the ability to move quickly, with suppleness, skill and control. It’s a noble ambition for CIOs, but it’s unachievable as long as IT’s role is unchanged.

The research on agile IT organizations boils down to a recommendation that IT be transformed to operate like a business, much like an external service provider. This advice implicitly assumes that if IT’s execution is perfected, then the outcome will be agility, and the core complaints of your business partners will be addressed.

But let’s face facts: Nobody really likes external service providers, and even the most agile IT organization—featuring perfect governance, resource management, processes, infrastructure, cost transparency and organizational structure—probably will not be enough to satisfy the business’s expectations on time, quality and cost.

The role of IT has to change. Your business partners will be satisfied only when they directly control IT service delivery and, therefore, feel accountable for the results. Over time, IT has assumed “surrogate user” roles that the business has been unable or unwilling to assume. The business partners of tomorrow (currently in their late 20s and early 30s) will not take such a passive role with IT.

CIOs can increase IT agility by getting out of the way. They should strive to enable their business partners’ ability to satisfy their day-to-day IT needs on their own, without having to wait in lengthy governance lines for project approval, funding and staffing.

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How Existing
 Technology Can
 Make Enterprise
 Data Mobility a
 Reality—Today

The Information Edge



We all recognize the tangible business value of information. Companies worldwide have invested millions of dollars in technologies that collect, analyze and secure corporate data, and an untold wealth of information resides within enterprise walls.

But it's not enough.

It's not enough to have mission-critical enterprise data stored in a centralized system at corporate headquarters when the employees who need it most are in the field interacting with customers. It's not enough to build a data warehouse unless that data can be accessed where it's needed—at a hospital bedside, a retail aisle or a distribution center. It's not enough to use business intelligence tools to analyze information in corporate headquarters while the most important decisions are made by increasingly mobile frontline employees who need to access the data anytime, anywhere. And

it's not enough to share information through the corporate intranet and email from your desktop, while your competitor's workforce is doing it in the field.

To truly maximize information assets, business leaders must deliver corporate information to employees at the farthest edge of a company—a factory floor, a distribution warehouse, a customer site, in a major metro area or in small-town USA.

"The ability to use data at the right time and place can have a dramatic effect on a company's ability to make informed, agile decisions," says Marty Beard, senior vice



Custom Publishing

CASE STUDY

A New Path for BNSF Railway Company

Even the most venerable company knows that ongoing transformation is the key to business success. For BNSF Railway Company, a 155-year-old company with \$11 billion in revenue, mobile technology is a key example of its continual business transformation.

BNSF needed a way to give its 6,000 field workers access to important information on the job. The railway's track maintenance workers, for example, spent hours each day desk-bound, gathering paper and data from different sources before they could tackle their real work—maintaining the company's 41,000 miles of track stretched across 28 states and two Canadian provinces. Once that work was done, they faced more paperwork, as they wrote up data that then had to be keyed into the corporate systems. Bottom line: These field employees needed a way to quickly access work orders and information, generate reports and connect with central operations, as well as easily and reliably capture data in the field and optimize scheduling.

A team put together by Jeff Campbell, Vice President, Technology Services and CIO at BNSF, created a solution using complete mobilized solutions based on Intel® Centrino™ mobile technology-based notebooks to access the Cisco-powered 802.11b hotspots in key facilities, while relying on Cingular's nationwide wireless data network to access critical information in the field. Software technologies from Sybase bring the solution together by consolidating the necessary mission-critical data from corporate systems, and by providing the mobile data management and synchronization technology to bring the information from the data center to the mobile device and back.

As a result, workers now stay in touch with business data and applications all day. Moreover, data is entered as work is done and validated at the point of the labor, greatly increasing data accuracy and availability.

"Mobility will be the key driver transforming the way we do all applications over the next five years," says Campbell. "The engineering workforce can now react better, interact more efficiently with our dispatchers and be more efficient with their track time, so our train flows are smoother than ever before. There are just tremendous advantages for our company."

president of corporate development and marketing at Sybase. "The challenge is how to make the most of the assets that companies already have in place in order to give employees the ability to securely access information anytime, anywhere."

Consider these facts about mobile sales force and field service enablement:

- **ROI is tangible and measurable**—productivity and efficiency gains, faster and more informed decisions, improved accuracy and reduced paperwork.
- **Technology has reached a level of maturity**—overcoming integration chal-

lenges, and reducing deployment risk.

• **Companies in a variety of industries and sizes** are adopting mobile and wireless software solutions to gain and retain their competitive edge.

According to Aberdeen Group, field forces enabled by mobile technology experience a productivity boost of 100 percent after only two years' experience with wireless. Further, according to recent research performed jointly by Cingular and Accenture, a majority of businesses that deployed real-time wireless solutions did so to boost productivity (64 percent of the Cingular/Accenture survey respondents) and realize operational cost reductions (52 percent of the respondents).

That's good news for companies looking to gain or retain their competitive edge. Mobility gives businesses immediacy—the ability to get information anytime, anywhere. "Today more than ever, time is money, and enterprises are working hard to accelerate business processes, remove inefficiencies and accelerate decisions," says Jeff Bradley, Vice President of Business Data Services at Cingular.

"Today more than ever, time is money, and enterprises are working hard to accelerate business processes, remove inefficiencies and accelerate decisions."

"Companies began to experience the benefits of immediacy by implementing wireless email, and by now virtually every company has deployed a wireless email solution to mobile professionals. From health care delivery, to consumer goods manufacturing, to high-tech field services, business executives are witnessing a productivity boost fueled by real-time wireless data."

The need for always-available computing, the ability to access information anytime, anywhere, regardless if a network connection is available or not, is particular-

ly relevant in light of increasing market pressures to better serve customers at the edges of corporate value chains. The front line, where customers and partners actually interact with a business, is the place most likely to have limited access to business knowledge—and that's where it will bring the most benefit. Using mobile solutions to give field personnel access to pertinent data allows workers to cross-sell and upsell more effectively, whether during a service call or at the point of sale.

At the same time, it's always a safe bet that competitors are also working on mobile strategies to allow their workers to do business faster, cheaper and more effectively. "Effective mobilized solution strategies are based on the move toward a Services Oriented Enterprise," says Chris Thomas, Chief Strategist at Intel. "Many companies today are now effectively integrating mobile device platforms with mobilized applications utilizing wireless connectivity to deliver information at the edge of their enterprise."

Solutions Are Here Today

In a confluence of need and ability, the technology that underpins an enterprise mobile strategy has attained the maturity necessary to support vital business goals. Consider:

Improved Products—New form factors, longer battery life and the ability to run on multiple operating systems means that mobilized devices based on Intel® Centrino™ mobile technology provide mobile workers with ever-more productivity. Middleware solutions such as Sybase's iAnywhere mobile software technologies allow developers to write once and deploy to any device.

Reliable Networks—Wide-area wireless networks such as Cingular's nationwide wireless data network with EDGE technology can now provide high-speed, reliable and global connectivity. Enterprises can now deploy consistent, enterprise-grade solutions to access information wirelessly for increased productivity.

Open Standards—Today's leading mobile software and hardware technolo-



ingular Wireless is the nation's largest wireless carrier, serving 95 percent of the Fortune 100 and more than 80 percent of the Fortune 500. Cingular offers businesses:

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- The widest global roaming footprint of any US-based wireless provider
- The fastest national wireless data network with EDGE technology

Cingular provides:

- End-to-end services to drive revenue, reduce cost and enhance customer satisfaction
- Wide selection of business devices for every worker and every type of work
- High-impact business solutions—from corporate wireless email and messaging to industry-specific line-of-business applications
- Extensive knowledge base of real-time wireless reference architectures and business process best practices
- Dedicated account team that works every day to earn the right to be a trusted partner



Cingular has the expertise to help your company maximize the benefits of wireless data solutions while helping minimize time, risk and cost of ownership:

- Dedicated professionals—account managers, data solution consultants, enterprise architects and system engineers—with a passion to determine how wireless can create tangible business value for our customers
- Ecosystem of alliances with trusted market leaders like Sybase and Intel to help deliver end-to-end solutions

For more on Cingular's mobile solutions, please visit:

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Intel works with top industry players to bring together mobilized software, comprehensive wireless networking and robust mobile client architectures such as Intel® Centrino™ mobile technology and Intel® Mobile Media Architecture to enable business transformation solutions.

For more information on the mobile products and solutions being delivered to the industry today, please visit:

www.intel.com/go/mobilizedsolutions





Sybase is the largest enterprise software company specializing in managing and mobilizing information from the data center to the point of action, helping customers to create an information edge. Sybase data mobility solutions manage and mobilize information to the front lines of the enterprise—whether online or offline—delivering always-available computing. Sybase provides open, cross-platform solutions that securely deliver information and powerful business applications to the Web and to handheld, desktop and wireless devices.

SYBASE®

Sybase helps customers:

- Optimize investments from database to device by managing and releasing the value of information
- Link resources by integrating, securing and speeding the flow of information, independent of data source or destination
- Extend reach by accessing information and applications easily at the point of action

For more on Sybase's industry-leading data mobility solutions, please visit: www.sybase.com/products/mobilesolutions

gies are standards-based, meaning they can integrate with existing heterogeneous IT systems, keeping the cost of a mobility solution low. Even wireless devices connect seamlessly halfway around the world thanks to GSM, the global standard for wireless communications.

Increased Security—IT professionals have taken advantage of robust security standards and enterprise products to address the challenge of guiding enterprises to design and implement end-to-end security solutions that meet corporate security guidelines.

Manageable and Managed Solutions—IT organizations have put in place middleware applications that enable the integration of information in disparate systems. Products for the remote management of mobile devices, such as Sybase iAnywhere mobile solutions, allow organizations to track and manage the growing number of mobile devices.

Reliable Support—Finally, business-focused industry players provide project management and deployment support to streamline and accelerate large mobile and wireless data deployments, customizing their own business processes to meet demanding customer requirements.

Leaders at the Information Edge

To be successful in mobile business endeavors, business leaders rely on their trusted technology advisors to provide leadership, expertise and experience. Enterprises demand that technology leaders step up to the challenge and bring the solutions together, end-to-end, to create immediate business value.

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Providing the mobile workforce with the information it needs, at the point where business transactions occur, is the next evolution of optimizing IT systems to drive increased revenue for a business. Organizations have an enormous opportunity to transform how businesses, employees and consumers interact. Every organization, in any sector, has a field force that can benefit from these mobilized solution capabilities. The time to fully utilize the benefits of mobilized solutions and bring information to the field force is now. Cingular, Intel and Sybase are here to help. ■■

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In short, IT should attempt to disintermediate itself from its own supply chain.

In case you think I have lost my mind, be assured that while CIOs are enabling their partners' self-sufficiency, they must also ensure that IT is done right. (See my previous column, "Give Away Authority to Gain Control Over IT's Purpose," www.cio.com/040105, on the fiduciary role of IT.) They should establish the IT principles, decision rights and processes that govern strategy, investments, architecture, infrastructure development, delivery, assets protection and compliance.

The IT-Enabled User

The only way that the "enabling IT" vision will become a reality is through an enabling infrastructure—specifically, a development and delivery environment that allows business partners to add or modify capabilities while ensuring integration, compliance and operational performance. The good news is that environments such as this are currently under development; the bad news is that they are being designed for programmers rather than for hands-on use by the business. Take the example of a large financial services company wherein the CIO is focused on improving programmer productivity by 15 percent: He is missing the opportunity to increase his "virtual programmer" ranks at least tenfold by failing to draft business partners to work closely with IT and its products and services.

Realistically, most IT organizations are far from possessing the capabilities necessary to enable their business partners. The key to moving toward the "enabling IT" vision is to ensure that business partner self-sufficiency is a goal of every change that is made—to governance, processes, applications, maintenance, service, staffing, education and so on. For example, an entertainment company CIO has created a document management capability that allows the majority of "instances" to be implemented by the end users who work directly with the records retention organization.

By enabling their business partners' IT capabilities, CIOs and their organizations can free themselves from the futile pursuit of trying to become business experts. Effective use of IT requires intense, senior-level focus on critical issues such as encouraging innovation and managing change, facilitating effective business processes and knowledge-sharing across the enterprise, building quality technical infrastructures that support rather than stymie change, protecting information assets and ensuring legal compliance, and ensuring that benefits are real and the costs are reasonable.

For me, enabling IT makes sense. It addresses IT's time-to-market issue by exploiting the fact that business users have always wanted more control (remember end user computing?), and it unleashes the resources of the enterprise toward this end.

If you disagree with my view of the future of IT, that's fine. But my challenge to you is: What's yours?

Reader Q&A

Q: It seems like you are saying that agility is both a good goal and the wrong direction for IT. You write: "Agile is a great word for IT because it speaks to the core IT issues," and "even the most agile IT organization—featuring perfect governance, resource management, processes, infrastructure, cost transparency and organizational structure—probably will not be enough to satisfy the business's expectations on time, quality and cost."

A: Agility is a great goal for IT but insufficient as a strategy. The current role of IT in most organizations is inappropriate. Pursuing any strategy that assumes more of the same ultimately will lead to marginal improvements and missed opportunities. Expecting agility to provide IT performance improvements of any order of magnitude is like asking people to improve their looks so that they can get married. In the end, there will be some improvement in outward beauty but little assurance of reaching the goal.

Q: CIOs need to earn their stripes by focusing on the critical questions you outline before they can think of giving away IT roles to the business. Most businesspeople don't want to do IT, they want IT done for them. A balance of service and transparency is necessary but difficult.

A: The current definition of IT's role requires IT to serve as the advocate, controller, supplier and, many times, the customer for IT services. Under that role, CIOs will never have enough time to focus on critical questions. I agree that businesspeople don't want to "do IT" under the current terms of engagement that call for them to be included as a resource on a work plan without any real influence. Yet time and

time again, business managers have shown that they want more control over IT.

For example, an IT client of mine is trying to come to grips with a

move by his business customers to build business analysis capability. Their goal is to take control of their IT strategy, project priorities, data and processes. The typical CIO's knee-jerk reaction would be to start a turf war, on the assumption that IT is losing market share, rather than focusing on how to help the business build proficiency. CIOs should modify their working relationships and approaches to factor in smarter, more self-sufficient customers. **CIO**

Susan Cramm is founder and president of Valuedance, an executive coaching firm in San Clemente, Calif. You can e-mail feedback to susan@valuedance.com.



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The Personalized Economy

Mass production has hit a dead end. Today's consumers increasingly expect individualized attention. CIOs can help their companies understand this shifting economic landscape.



A quarter-century ago, MIS directors complained of not having a seat at the strategy table. The CIO's role eventually emerged—a technology visionary and bridge to a gleaming future. Has that dream died? In recent meetings, I have been surprised by the old familiar refrains—the lack of strategic clout, the difficulty of sustaining board-level interest. At one elite gathering, there was a palpable sigh of relief when a CIO proclaimed, “It’s our job to build the sewers.”

I guess he’s right. According to the latest figures, 75 percent of the typical IT budget is spent on legacy systems. Instead of redefining their industries, too many CIOs became prisoners of the status quo—buried in mandates for cost reduction and compliance. But while they were trapped in the sewers, all hell broke loose above ground. These same 25 years have seen a tectonic shift in the foundations of capitalism, a shift that has left our businesses badly out of sync with the people who depend on it for consumption and employment.

Today’s companies remain rooted in a business logic invented a century ago to mass-manufacture goods for a then-new population of people with very little stuff who wanted more. The 20th-century corporation required a strict inward focus in order to manage the new complexity of economies of scale. It emphasized the concentration of resources, command and control, cost and efficiency. This “managerial capitalism” produced epic wealth for many decades, because mass consumers wanted exactly what companies were skilled at giving them: cheap goods.

But yesterday’s mass society has given way to a new society of individuals—people who are more educated, informed, experienced, traveled and connected than earlier generations. They

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are shaping a profound change in the nature of consumption: It's no longer about the quantity of stuff, but rather about the quality of life. A growing body of data suggests that the new consumer is in search of something that isn't even available yet: advocacy and assistance in the daily work of negotiating an ever more complex life. Toasters and mortgages are necessary, but no longer sufficient. For example, it's easy to find a competitively priced health insurance policy but difficult (impossible?) to find an insurance company that will really be there when you need it—no tricks, no strings. Patients can get access to a range of medical specialists, but there's no one to shepherd them through the system—find, sort, integrate and explain critical information—and advocate on their behalf. We can pick from among comparably priced and equally uncomfortable airline flights, but there's no one who will take responsibility for managing a complicated travel schedule, transportation and lodging, needs that arise on the trip and the requirements of your household while you are gone. Just to change my flight today—same airline, same day, two hours earlier and a plane that was nearly empty—I paid a penalty fee of \$150. When consumers are routinely punished for their intricate lives, it's no wonder these fragmented transactions no longer yield significant margins.

A Perfect Storm

Today there is a growing chasm between consumers' needs and the business organizations they depend upon. Too often people must confront a wall of cluelessness and indifference—a commercial world still fitted out for the old mass order. This chasm can be seen each time someone spends the evening checking her phone bill for bogus charges, finds his routine insurance claim rejected or spends hours on the phone trying to fix a malfunctioning new computer. The chasm is expressed in these brutal facts. Only 4 percent of U.S. adults say they trust their HMO; 7 percent, their health insurer; 11 percent, their life insurer; 12 percent, their telco. And the numbers don't get much better. Seventy-four percent say corporate America's reputation is "not good" or "terrible," and 83 percent say that big companies have too much power, according to recent polls.

There's a centuries-old pattern here: A business model has hit its stride, and its success produces rigidity and resistance to change. But society continues to evolve. People move on, taking a potential marketplace of unfulfilled needs with them. In the mainstream economy, businesses can no longer extract high margins for their products and services. This leaves everyone to fight over a shrinking pie in a downward spiral of cost reduction and commoditization. These are precisely the conditions that have driven so many CIOs into the sewers.

But there is good news too. Capitalism is a book of many chapters. In the past, these downward spirals set the stage for new competitors to emerge with business models that reconnect

with people, releasing the economic value concealed in their unmet needs. The last time this occurred was a century ago. Then, a growing mass of people was hungry for goods, but products were in short supply and expensive, still produced in custom workshops and small factories. Henry Ford was among the first pioneers to perceive the yearnings of these new mass consumers, and he invented a whole new approach—mass production—to meet their needs. Ford's economic revolution, like

In the new economy, there's no more room for adversarial behavior that ekes out a profit at the expense of consumers or employees.

others before it, arose from a perfect storm of three converging forces: new markets of unmet needs, technologies capable of meeting those needs and a new enterprise logic that linked people and technologies in a new pattern. Today, we find ourselves in the gathering winds of just such a storm. We have new markets of individuals whose very alienation and mistrust is the opportunity for vast innovation and immense wealth creation. We have the kinds of technologies that can meet these new needs—a digital medium that can handle the complexity of individualized support. This will become the ultimate purpose of the many exciting new technical developments: wireless mobile networks, on-demand computing, peer-to-peer and media convergence just to name a few. Don't assume that the race between telco, satellite and cable companies to wire the home is simply an opportunity to funnel more gadgets and entertainment into each living room. This will be the interactive medium through which individualized support bundles—including home health care, education, travel, financial services, product acquisition and much more—will be piped to each family and each person at a price they can afford.

Finally, we are just beginning to see the emergence of that third force, a new enterprise logic of "distributed capitalism" that knits technologies and people together in a wholly new pattern. It shifts the game from the adversarial transaction economics of mass production to a new advocacy-based relationship economics capable of reigniting long-term prosperity and growth. What are some of its hallmarks?

The Consumer Is Queen

Business is conducted from the inside out. Business processes are organized from the point of view of the individual consumer and aligned with the individual's interests. Forget about what niche you're in, or even what industry. The new enterprise asks, "Who will want us to support them, and what do they need?" Then figure out whom you need to collaborate with to

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make it happen. Wholly new “support networks” will cluster around individuals, families and virtual communities with the sole purpose of supporting their aims.

The new model emphasizes the distribution, rather than the concentration, of assets—people, information, authority, technology and so on. Economic value is now understood as distributed in the unmet needs of each individual: It is lodged in their hearts and minds, living rooms and kitchens. Value is “realized” in relationships of advocacy and trust. It’s no longer adequate to think that value can be “created” inside factories or offices.

When wealth creation depends upon authentic relationships of trust and advocacy, there’s no more room for adversarial behavior that ekes out a profit at the expense of consumers, employees or suppliers. In a support network, all behavior is aligned with the interests of the individual who pays. More alignment means more cash, more profit and more well-being distributed throughout the network.

eBay is an example of one small step through this looking glass. It realized previously hidden economic value by listening to and aligning itself with the needs of its members. It learned through trial and error how to engineer trust. Riding this inside-out distributed value-based logic from its inception in 1996, it

posted gross sales of \$70 billion last year. But eBay has addressed itself to just one tiny slice of consumer needs and in one very limited format. Imagine hundreds of eBays using a variety of means and methods, able to link and coordinate support across the widest pos-

History teaches us that those enterprises that move decisively to reconnect with an alienated population get rich first.

sible spectrum from health care to house repairs—all on the consumer’s terms.

History teaches that the enterprises that move decisively to reconnect with an alienated population get rich first. But, like the thousands of companies that derided the new disciplines of mass production a century ago, there will be many that cling to current practices, determined to ride out the tide. They are unlikely to survive the next decades. CIOs with their unique expertise in distributed processing and digital platforms have the potential to help define the new enterprise logic. We need the CIO that was imagined a quarter-century ago, even more so now. It’s time for the CIO who stands on the shoulders of technology to become the champion of the individual. But don’t forget to bring your coat. It can’t be done from the sewers. **CIO**

For More on the New Economy

You can read an excerpt from Shoshana Zuboff’s 2003 book online. To find the excerpt, go to the online version of this article or go to www.cio.com/040105.

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Shoshana Zuboff is the coauthor of *The Support Economy: Why Corporations Are Failing Individuals and the Next Episode of Capitalism* (Viking 2003) and a professor at the Harvard Business School. E-mail her at zuboff_maxmin@thesupporteconomy.com. Please send your comments to Executive Editor Alison Bass at abass@cio.com.



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The Price of Nice

Machines are cheaper, but people are sweeter. Someday, only the rich will be privileged enough to deal with human beings. The poor will be forced to use technology.

BY MEGAN SANTOSUS



I ranted in this space last December about the less-than-satisfactory experiences I've had with self-checkout technology. Top on my list of shame was The Home Depot. While its technology was certainly annoying and ineffectual, what really ticked me off was the customer service that came along with it. Or, more accurately, the service that did not come. Ever. While the technology crashed and burned in full view of at least a half-dozen orange-smocked employees, not one of them offered to help. Indeed, they scattered and hid. Even when I abandoned the sale, no one appeared. For all I know, the lightbulbs and wood bundle I wanted to buy are still sitting at the dusty self-checkout counter, mute testimony to a sale gone wrong, a business strategy gone awry.

Lest I appear a crank, let me say that I'm not the only person who has suffered so. Nearly a dozen readers wrote in to say that they, too, had tangled with those self-checkout lanes and come out on the losing end. One reader wrote that a recent self-service mishap drove him back to his local hardware store, where he has rediscovered the joy of having salespeople treat him as if he were—imagine!—a paying customer.

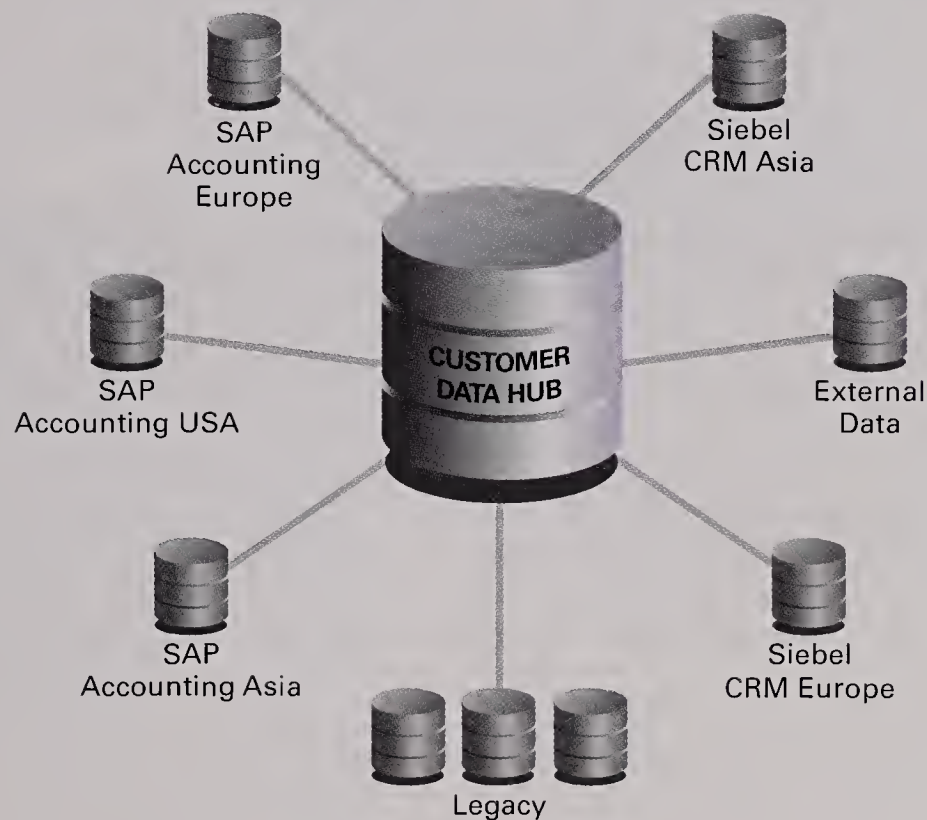
Yes, the prices are higher at Ye Olde Hardware Shoppe. Yes, he thinks it's worth it.

Those letters got me thinking. Retailers spend a hefty amount of money on self-service and CRM-types of technology, with the idea that such high-tech stuff will give them a competitive edge, either by allowing them to cut costs (thereby increasing margins) or improve service (thereby increasing volume), or ideally, to do both. While that may work from time to time, what's more important from a customer perspective is the no-tech stuff. Let's face it: A box of detergent is a box of detergent. It may be

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a few pennies more here or a few pennies less there. But for most of us, those few pennies don't make or break the deal. What, in fact, does seal the deal isn't streamlined checkouts, continuously replenished inventories or convenient price scanners; it's service. And by that, I am referring to people, not machines.

The Golden Rule of Service

So many of life's daily transactions have become radically impersonal, increasingly mediated by technology. We don't see or even talk to our friends; we e-mail them. We don't go to the store; we shop online. We don't rub elbows with our neighbors at the theater; we punch up on-demand movies and sit in front of our televisions. As technology costs fall, human costs will inevitably rise in comparison, and there will be fewer and fewer opportunities for most people to deal with other human beings. In fact, those interactions have already become special. Perhaps that's why I'm willing to go out of my way (or even pay a premium) to experience them.

So many of life's daily transactions have become radically impersonal, increasingly mediated by technology.

For example, I've got at least four supermarket chain stores located within 10 minutes of my house, but I usually spend an extra half hour driving to Whole Foods Market or Trader Joe's, two relative upstarts that sell lots of organic and all-natural products. While Trader Joe's prides itself on low prices, Whole Foods charges as much for a gallon of milk as I would expect to pay for a six-pack of decent domestic beer. What both stores have in common, however, is competent employees who obviously are happy to help customers.

At Trader Joe's, Audrey Dumper, vice president of marketing, won't divulge specific details about the privately held company's hiring practices, but she hints that the grocer isn't exactly engaging in rocket science. "First and foremost, we try to hire nice people," she says. Without that foundation, she suggests, there's no way to train anyone to be customer-service oriented.

I'm as time-strapped as anyone, yet I've gone to Trader Joe's regularly for the past couple of years, even though that means I have to visit more than one store to buy the stuff I need every week. Located in a parking-space-challenged strip mall with the same square footage as a decent video store, Trader Joe's doesn't carry a wide range of brands. "Eighty percent of our products

are private label," Dumper explains. So without familiar brands like Coke or Tide dominating the shelves, customers may need more assistance finding what they need. Most of the times that I've been in the store, at least one

employee has asked me if I needed help. Many also take note of what I've thrown into my cart. Just the other day, an employee wanted to know what kind of sauce I put on the butternut squash ravioli. "Alfredo," I said. "That sounds good," he replied. "I hadn't thought about that."

Therein lies the simple genius of Trader Joe's. Employees are there to help customers, but they are also there to learn from them. Dumper confirms this strategy. Without focus groups or reliance on outside market researchers, employees who engage customers in conversations collect useful feedback. What's good for the company is good for the customers. And it's all accomplished with no technology, but with simple human interaction.

Let Them Eat CRM

Trader Joe's is unusual in its attention to customer service but not unique. When I need to complete my shopping for the week, I head to Whole Foods Market. Yet my experiences with the employees are worth the premium. Whenever I have a question (such as what happened to those wheat-free, fruit-filled toaster cakes I liked), I've come to expect two relatively simple, yet increasingly unusual things: 1. I will find an employee who will be able to help me; and 2. That employee will not sigh heavily, roll his eyes and, in general, make me feel as if I had just asked for one of his kidneys.

Just the other day, I was hunting for a can of sliced mushroom pieces with stems. (I was planning to make a dish I like to call *Champignons en Aluminium à la Santosus*.) A quick pass down the canned vegetable aisle didn't reveal its whereabouts, so I continued until I found an employee restocking the snack foods aisle (an aisle with which I am intimately familiar). I asked him where I could find the mushrooms. He didn't just tell me; he stopped what he was doing, accompanied me to the correct aisle (the one I had breezed down earlier), plucked the mushrooms off the shelf and handed them to me, bowing (I thought) slightly from the waist. And then he asked, "Is there anything else I can help you find today?"

He didn't say it snarkily. He said it like he meant it.

Fortunately, I have the luxury of time and the discretionary income to shop at stores like Trader Joe's and Whole Foods Market. I'm willing to endure a bit of inconvenience and a higher tab because the service is better. And to me, that's worth the money and time. Unfortunately, many other consumers do not have the resources to make that choice. Instead, they must patronize stores where bad-but-cheap technology has replaced good-but-expensive people. In such a world, customer-service with a human face is increasingly being reserved for the privileged few. **CIO**

Senior Editor Megan Santosus, a people person, can be reached at santosus@cio.com.



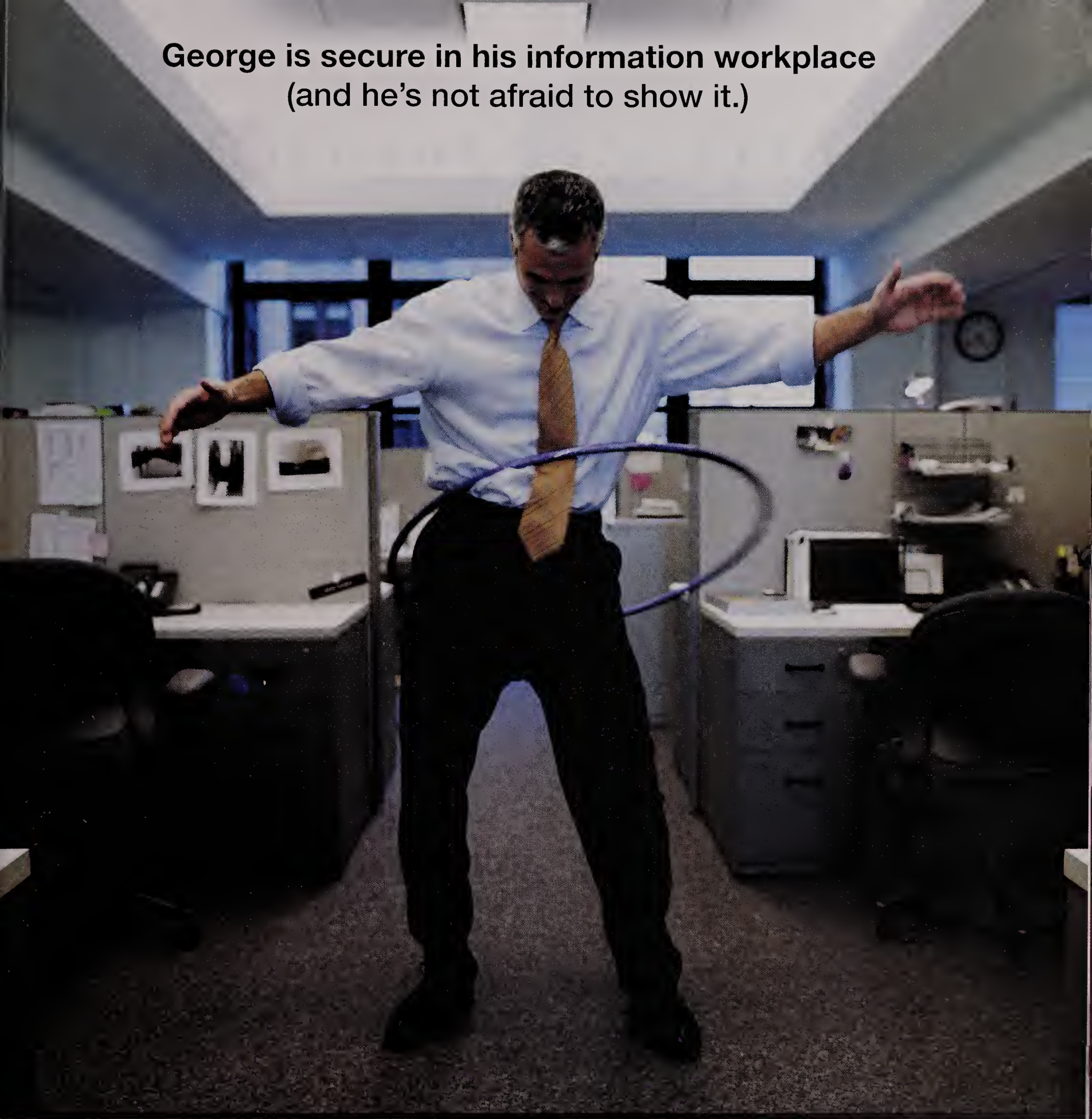
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REALITY Check

Faced with a mandate to cut costs while creating competitive advantage, CIOs have turned to IT-enabled innovation

BY ELANA VARON

In a world that is constantly changing, data keeps us grounded.

The right statistics communicate succinctly, tell you where you are. In the four years since we began conducting our exclusive “State of the CIO” survey, we have compiled an annual benchmark of the CIO profession—your reporting relationships, your budget, your priorities, your challenges, the impact IT has on your companies and the best practices for your success.

Our 2004 survey showed a new mandate emerging for CIOs—one that requires them to reduce costs while simultaneously using IT to drive competitive advantage. This seems like a paradox, but successful CIOs have learned that IT-enabled innovation is the way out of the bind. Though disruptive innovations—those that change the dynamics of an industry—get most of the publicity, innovation (broadly defined) is any improvement that delivers a business benefit. Even investments to comply with Sarbanes-Oxley can be considered innovations if the result is that executives are able to use financial data more effectively.

“From sheer competitive pressure, every business now realizes there is no time of [being] static, that change is constant, and innovation is required every moment,” says Thomas Gerrity, professor of management and operations and information management at the Wharton School. Even cost reduction, Gerrity says, “requires innovative thinking” because it engenders change in business processes.

Given the pressure to keep moving, the context in which you operate and innovate is what defines your path to success. It makes a difference whether the brightest programmers flock to your door or you’re struggling to attract fresh

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Shaygan Kheradpir, Verizon



Ken Erdner, Old Dominion Freight Lines



Robert Taylor, Fulton County, Ga.

talent; whether the goal of IT innovation is to beat the competition or simply to keep up; whether you're rewarded for making money or for saving it. So for "The State of the CIO 2005," we delved more deeply into how you define the mandate for innovation and how, given that mandate, you're coping with the demands of your specific environment.

To that end, we went on the road to profile three CIOs, each of whom works under different expectations and within distinct constraints. The daily experiences of these CIOs—chronicled during two days in January when our writers walked the halls of corporate headquarters, attended their meetings with them and interviewed their colleagues as well—provide a window into innovation and a reality check on the state of the CIO.

One thing these profiles make clear is that no matter how big your budget, no matter how much your boss values your strategic vision, being a CIO is a hands-on job. Even CIOs who are rewarded for thinking big have to roll up their sleeves and dig into problems. Michael Earl, professor of infor-

mation management at Oxford University (and a member of *CIO*'s editorial advisory board), says that corporate priorities for IT regularly swing between a mandate in which CIOs deliver systems and one in which CIOs engage in business strategy and innovation. "Sensible CIOs pursue a balance between high performance on delivery and on the strategy and innovation side," says Earl. "When the climate starts to ask you for strategy and innovation, you end up spending 50 percent of your time on that." But you can't ignore tactical details.

With an IT budget of approximately \$1.5 billion, Verizon CIO Shaygan Kheradpir commands resources most CIOs only dream of. But inevitably, money comes with strings. Verizon has pinned its business strategy on being first with new IT-enabled products and services, and it is Kheradpir's job to produce them at a steady clip—even if it means e-mailing his staff at 2 a.m. Read about how Kheradpir manages innovation in "Sleepless in Manhattan," Page 52.

Meanwhile, at Old Dominion Freight Lines, a less-than-truckload shipper, Vice President of Technology and Information

Services Ken Erdner juggles the demands of a budget-conscious boss, skeptical end users and a competitive environment that rewards efficiency above everything. Old Dominion is dominated by industry giants such as FedEx and Yellow Freight; whatever innovations Erdner undertakes are geared toward keeping up with them technologically. Erdner's situation is in many ways typical of what CIOs face these days, according to our "State of the CIO" data. Find out more about how he tries to do it all in "Everyone Wants Something From Ken," Page 62.

Robert Taylor, CIO for Fulton County, Ga. (which encompasses downtown Atlanta), has a vision of a county that uses innovative IT to deliver government services, but he constantly bumps into political reality. For the elected officials who approve Taylor's budget, IT is more an expense than an investment. As a result, Taylor struggles to find enough resources to attract a staff with the right skills to execute his strategy. Follow Taylor as he works the system in "Where There's a Person, There's a Problem," Page 70.

CIOs as Innovators: Catalysts and Coordinators

Another finding that emerges from the profiles is that CIOs embrace their function as innovators, even in business environments where change is difficult. We wanted to learn more about your role as drivers of business innovation, so we supplemented our collected "State of the CIO" research with a survey on the purpose of IT innovation and CIOs' responsibility for it. We learned that you are being looked to for leadership in innovation. Slightly more than half of the 83 CIOs who responded to our survey on IT-enabled innovation said the percentage of innovative business initiatives that originate within the IT department has

increased in the past two years.

Furthermore, 65 percent said bringing ideas for IT-enabled business innovation to the table is a significant or dominant aspect of their roles. And enabling business innovation is a more important role for the CIO and the IT function than it was 18 months ago, back when cost-cutting was the paramount concern.

The need for cost-cutting hasn't gone away; it's simply part of the equation now. For an overwhelming majority of the CIOs who responded to our survey, reducing costs or improving productivity is the primary purpose of innovation, followed by improving customer satisfaction and generally creating or enabling competitive advantage. Thus, Fulton County's Taylor pushes a new system for

sharing jail management information as part of his strategy to centralize IT and eliminate redundant systems; Verizon's Kheradpir tweaks a new voice portal to minimize the number of customers who request repairs through live operators; and Erdner pitches ideas to improve efficiency to Old Dominion's vice president of field services.

Of course, ideas for IT-enabled business innovation don't spring fully grown from the foreheads of CIOs. Survey respondents report that interaction with other CXOs and business unit leaders is the primary catalyst for the IT department's most successful innovative ideas. That's as it should be, given that the results of innovation are focused on business goals, and it jibes with last year's

LEADERSHIP for Innovation

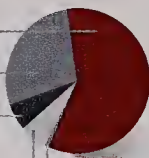
In 2004, you told us about a new mandate emerging for IT: Cut costs, but at the same time enable innovation and create competitive advantage. Our follow-up survey on IT-enabled innovation, a supplement to our collected "State of the CIO" research, delves further into the role of IT executives leading business innovation. The conclusion: IT-enabled innovation touches every aspect of your business and thus has become a significant part of your job.

Your Role

The importance of your position as an innovator has increased, but your relationship with business unit leaders is still critical to your success at all stages of the innovation process.

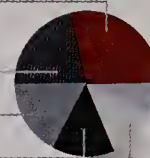
How much of your role is concerned with innovation?

Significant aspect of my role	59%
Minor aspect of my role	28%
Dominant aspect of my role	6%
Not an aspect of my role	6%
Not answered	1%



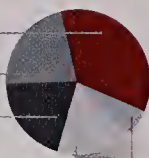
Where do innovative ideas come from?

Interaction with CXOs and business unit leaders	28%
Industry or market forces/trends and competitive pressure	22%
Interaction with internal users	17%
New technologies	14%
Interaction with external customers	12%
Directive from the CEO	7%



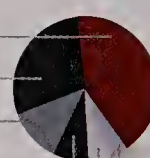
Who leads innovation initiatives?

CIO/IT and business units share responsibility	35%
CIO/IT department	22%
CEO	20%
Business units	17%
COO	6%



Who is accountable for innovation results?

CIO/IT and business units share responsibility	42%
Business units	29%
CEO	12%
IT	8%
COO	5%
Not answered	4%



Methodology

CIO's survey on IT-enabled innovation was designed to gather additional information about the ways IT is contributing to innovation and how IT departments go about these contributions. The survey was conducted online from Nov. 1-30, 2004. A select group of CIOs recognized by CIO's editors and industry leaders for their reputations of excellence in effectively managing IT were invited to take the survey. Results shown here are based on the responses of 83 IT executives. In terms of company size, 49% of the respondents were from organizations with more than 1,000 employees. A broad range of industries were represented in the study, including manufacturing (11%); finance (10%); insurance (6%); federal, state and local government (9%); and wholesale/retail/distribution (7%).



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"State of the CIO" finding that a healthy relationship with other CXOs is the most critical factor for your effectiveness. CIOs "are in a position of partnering," says Wharton's Gerity. "They can't [innovate] on their own. It takes particularly strong interpersonal skills and broad business skills."

On the IT side of the ledger, innovation has far less to do with the latest technology than with fundamental aspects of IT infrastructure—such as revamping the IT architecture, installing data warehouses and other technologies to facilitate data access, and developing Web services. Such investments enable IT to operate more efficiently and create a technology environment in which continually changing business needs are easier to address. Eric Sigurdson, managing director and North American information officers practice leader with Russell Reynolds Associates, says improving the effectiveness of the IT organization is part of the job description for every CIO position he is hired to fill.

Emerging technologies—such as radio frequency identification—have a lower profile, in part, suggests Oxford's Earl, because CIOs are still suffering from the dotcom hangover. "They don't want to get their fingers burned," he says. Even so, "most innovation doesn't start by asking, Here's a new technology, what can we do with it? It starts by saying, I've got a big problem I have to sort out."

For more on the CIO's role in innovation, see "Leadership for Innovation," Page 44; and "New Gains from Proven IT," this page.

Dealing with Reality, Striving Toward the Ideal

The three CIO portraits in this issue point to another conclusion about the state of the CIO: Success as a CIO happens in less than ideal conditions. None of the three, for instance, reports to his company's CEO, although most CIOs say their reporting relationship is a key factor in their effectiveness. That's reality. Yet, there's a model for every profession—an ideal to strive for.

Turn to "Wanted: The Best CIO," Page 83, to find this model, in the form of a "job spec" from a hypothetical company that understands the value of IT. To develop the spec,

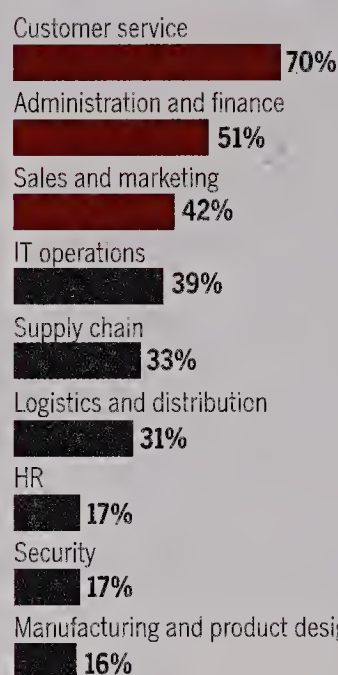
NEW GAINS from Proven IT

While every business function benefits from innovation, your efforts are largely concentrated on projects that reduce costs, improve customer satisfaction or create competitive advantage.

When it comes to choosing technologies to enable innovation, you aren't rushing to the bleeding edge. Most IT-enabled business innovations make use of well-known technologies, and infrastructure investments predominate.

Business Benefits

Which functions benefit most from innovation?



Respondents picked their top three.

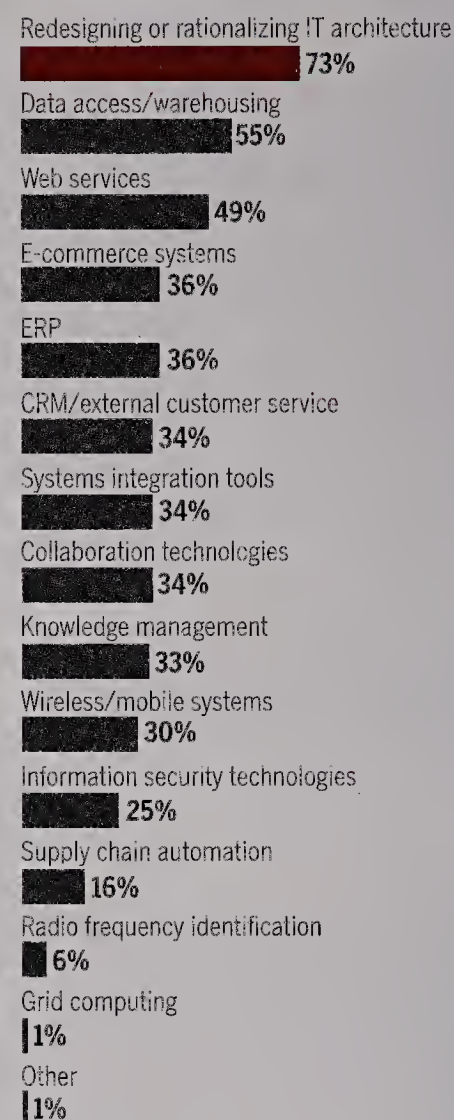
What is the goal of innovation efforts?



Respondents checked all that apply.

Top Technologies

What are the key technologies for innovation?



Respondents checked all that apply.



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we drew on our "State of the CIO" data and other studies about the role, as well as interviews with executive recruiters and CIOs. The CIO Executive Council, a professional association of CIOs founded by *CIO*, helped us refine the final product.

The spec defines what we believe are the ideal attributes of the CIO position, including executive relationships, staff, responsibilities and processes. It also describes the background, job experience and skills we think a CIO should have, and it outlines metrics for measuring the CIO's performance.

In short, we think the ideal CIO is a strategic business leader, with outstanding working relationships and accountability and authority over all aspects of IT within his or her company. The ideal CIO has strong soft skills, such as communication and motivational ability. He or she should have a technology background but also business experience. And he or she should be measured according to the contribution that IT makes toward achieving the company's strategic goals.

You can see how you measure up to our ideal spec by taking the self-assessment test, "How Does Your Role Stack Up?" on Page 85. High scores indicate that you're a strategic CIO, within striking distance of the ideal. Low scores indicate that you have much work to do in improving your role and the role of IT within the organization. The quiz includes tips for improving your situation, with links to related articles from the *CIO* archives. (Find the links at www.cio.com/040105.)

Finally, compare your situation to that of your counterparts around the globe. Editors at our sister *CIO* magazines in Australia, Canada, Germany, Japan, Southeast Asia and South Korea surveyed their readers using our "State of the CIO" questionnaire. From them, we learn that connecting with the business is a common theme among CIOs globally. However, though you face similar pressures and share many of the same priorities, the context within which you operate differs from country to country. Find the highlights in "The State of the CIO Around the World," beginning on this page. **CIO**

Senior Editor Elana Varon (evaron@cio.com) coordinated this year's "State of the CIO" special report.

The State of the CIO Around the WORLD

BY ELANA VARON AND LORRAINE COSGROVE WARE

In our first global "State of the CIO" survey, your counterparts in Australia, Canada, Germany, Japan, Southeast Asia and South Korea reveal how similar—and how different—they are from you. For the most part, you share the priorities of making your business more efficient and aligning IT more closely with business goals. You also agree that top-notch business skills are critical to your success. But foreign CIOs diverge in how they allocate their time, in their views of the role of IT, the hurdles they face and the impact they will have on their companies this year. Turn the page to find snapshots of the state of the CIO around the world, and how you compare.

Focus on Efficiency

CIOs ranked their technology and management priorities. Improving business and IT efficiency are among their top goals.

Top 3 Technology Priorities

	United States	Japan	South Korea	Southeast Asia	Germany	Australia	Canada
Integrate/enhance systems and processes	1		1	1	1	1	1
Ensure data security and integrity	2		2	2	2	2	2
External customer service/relationship management	3		3	3		3	
Redesign/rationalize the IT architecture		1			3		3
Implement new technologies such as grid computing, Web services and RFID		2					
Other (deploy enterprise content management)		3					

Top 3 Management Priorities

Increase business efficiency through IT-enabled process improvement	1			1	1		1
Align IT and business goals	2	1	1	2	2	1	2
Improve internal customer satisfaction/increase usage of IT	3	2					
Create competitive advantage				3	3		
Control IT costs		3				2	3
Develop staff/leadership/business skills			2				
Enable/enhance knowledge management, leverage intellectual assets						3	
Other (new system development)			3				

CIO RESEARCH



● Branch Office

● Small Workgroup Office

● Corporate Office

● Road-Warrior Office

● Home Office

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The State of the CIO Around the WORLD (cont.)

Canada

GET CLOSER TO BUSINESS

CIOs in Canada spend the bulk of their time meeting with their company's executives and working with both IT vendors and non-IT business partners. Their U.S. counterparts say they concentrate on planning strategy, in addition to meeting with company executives and IT providers. CIOs in both countries agree alignment is a top management priority. But the Canadians appear to be further ahead in getting their business counterparts to share accountability for IT investments, which should have an effect on alignment.

Germany

TALKING STRATEGY

While fewer IT leaders hold the C-level title in Germany than in the United States (24% versus 49%), they are focused on business strategy. That's what 56% of IT executives in Germany are spending most of their time on, though they'd like to dedicate even more time to this task. German IT executives listed the shortage of time for strategic thinking and planning as the second biggest barrier to their effectiveness, after unrealistic or unknown expectations from the business. CIOs in the United States rated unrealistic or unknown expectations from the business and inadequate budgets as their top hurdles to effectiveness, with lack of time for strategic planning ranked third.

Top Three Activities

How CIOs spend most of their time

United States

- 71%** Interacting with your company's CXOs and business executives
- 58%** Strategic planning
- 54%** Interacting with IT vendors/outsourcers/service providers

Germany

- 56%** Strategic planning
- 55%** Leading projects
- 43%** Business processes

Respondents checked all that apply.

Where the Buck Stops

How IT spending is controlled

Centrally controlled by IT organization

- United States** 62%
- Canada** 42%

Blended control by IT and business units or functions

- 35%**
- 32%**

Directly controlled by business units or functions

- 4%**
- 4%**

IT and the business primarily share accountability for ROI from IT investment

- 30%**
- 42%**

IT leadership is primarily accountable for ROI from IT investment

- 12%**
- 20%**

Business unit leadership is primarily accountable for ROI from IT investment

- 7%**
- 9%**

Respondents checked all that apply.

Australia

ALL ABOUT MONEY

Sixty percent of CIOs in Australia report that their budgets are determined by the business units, which accounts for their focus on generating revenue through IT in 2005. CIOs in Australia say that IT's greatest impact this year will be on revenue-generating activities.

IT's Contribution

Expected impact of IT in 2004/2005, ranked by importance

United States

- 1** Reduce costs through efficiency/increased productivity
- 2** Enable/drive business innovation
- 3** Create or enable competitive advantage

Australia

- 1** Generate new revenue streams
- 2** Grow existing revenue streams
- 3** Create or enable competitive advantage

UNIVERSAL SKILLS

The keys to being a successful CIO are the same around the world.

Like CIOs in the United States, IT executives in Southeast Asia and Germany cite good communication skills, ability to think strategically, and understanding business processes and operations as the most pivotal skills for success.

South Korea

FOCUS ON LABOR

CIOs in South Korea spend more of their time hiring and managing the IT staff than CIOs in the United States. South Korean CIOs listed this activity second, compared to fifth in the United States. Hiring and retaining IT staff is also among the top three management priorities this year for CIOs in South Korea, versus the seventh priority in the United States. And yet, outsourcing is somewhat more prevalent in South Korea: 85% of IT departments there report that they outsource, compared with 80% in the United States.

Outsourcing Levels

How much of IT is outsourced?

United States

CIOs in the United States who outsource report that on average **20%** of their IT labor is outsourced.

South Korea

All of IT **34%**
Part of IT **66%**



Southeast Asia

RISK AVERSION

Economic risk is a greater factor for CIOs in this part of the world. CIOs in Southeast Asia listed risk and uncertainty due to volatile economic conditions as one of the top three hurdles to their effectiveness. U.S. CIOs rank this sixth. Additionally, ensuring data security and integrity is the number-one technology spending priority this year for Southeast Asian CIOs. It's number two in the United States, behind integrating and enhancing systems and processes. Southeast Asian CIOs are also less likely to take risks themselves when it comes to driving business initiatives.

Support Versus Leadership

The IT department's role in the organization

IT should support and enable predefined business initiatives

United States 31%

Southeast Asia 73%

IT should proactively envision business opportunities and apply technology to achieve them

69%

27%

STRATEGIC PLANNING PRIORITY

Like CIOs in the United States and Germany, IT executives in Southeast Asia give strategic planning a high priority.

But getting it done is less of a struggle for Southeast Asians. They rank finding time for strategic thinking and planning near the bottom in a list of 10 barriers to their effectiveness.

Methodology

Here in the United States, we administered CIO third annual "State of the CIO" survey online from April 19 to May 19, 2004. CIOs, CTOs and vice presidents in charge of IT were randomly selected from our circulation file and invited to take the survey. The U.S. survey findings shown are based on the responses of 544 heads of IT from a broad range of industries.

Then we sent our questionnaire to CIO's editors around the globe and suggested that they, too, launch a "State of the CIO" study in their countries. Through a combination of online surveys, mail surveys and in-person interviews, our CIO magazine editors in Australia, Canada, Germany, Japan, Southeast Asia and South Korea gathered data from a total of 1,433 IT executives. The editors were allowed to tailor the questions for their specific audience. Results are reported according to the U.S. survey format.

Japan

ON A SPENDING SPREE

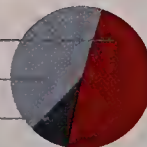
CIOs in Japan reported that their companies allocate a larger percentage of revenue to IT than companies in the United States, and they're spending it on new systems and applications such as Web services and open source. Sixty-five percent of CIOs in Japan said that the IT budget represents more than 10% of revenue compared with an average of 5.6% of revenue in the United States. One thing Japanese CIOs are not spending money on is their staff.

Staffing Levels Hold Steady

Will IT headcount increase, decrease or remain unchanged this year?

United States

Increase **48%**
Remain unchanged **42%**
Decrease **9%**



Japan

Remain unchanged **66%**
Increase **23%**
Decrease **10%**



Percentages may not add up to 100 due to rounding.

CIO RESEARCH

Shaygan Kheradpir,
CIO, Verizon

SLEEPLESS in Manhattan

The pressure to develop new products and services for Verizon never lets up. And neither does its CIO.

BY ALICE DRAGOON

Pulling all-nighters is nothing new for Shaygan Kheradpir. In grad school, he recalls, "Our brains were going all the time." Now CIO of Verizon, he runs his more than 7,000-person IT organization much like a college lab, a fraternity of smart people who welcome the crazy hours. Equally demanding of himself, he seems to have taken Verizon's corporate slogan—"We never stop working for you"—as his personal motto. After putting in a 10- or 12-hour day, Kheradpir's back online every night for three or four hours: IMing his staff, checking the day's business performance metrics, holding conference calls with developers at 11 p.m. (His wife has banned the late-night speaker phone so that she and the kids can sleep.) His people have grown accustomed to his 3 a.m. e-mails and the fact that Kheradpir might want to discuss them by 7 a.m.

But even with all that pressure, Kheradpir claims that headhunters have told him that young developers consider a job with Verizon IT to be a prize. Kheradpir believes that's because there's so much going on at Verizon that a bright, fresh-out-of-college programmer can have a big impact on the company right away. (Verizon's annual IT budget hovers around \$1.5 billion, which translates into hundreds of ongoing projects—ranging in size from \$20,000 to millions—that keep everyone busy.) Last year, Kheradpir's retail systems group implemented 40 major new systems in 40 weeks for his

The events in this story occurred on Jan. 12 and 13, 2005.

AGENDA 2005

⌘ Increase customer use of Verizon's self-service Internet voice portal and its website

⌘ Develop new ideas, products and services for Verizon's business

⌘ Win the battle for the digital home



Fiber-to-the-Premises (FTTP) program, even as IT operations cut costs by around \$50 million. (Since becoming CIO in 2002, he's reduced the IT budget by one-third.)

Kheradpir pushes so hard because he and Verizon are intent on winning the battle for the digital home, a battle that places IT squarely on the front lines. While competitors are economizing by laying fiber to the curb and relying on traditional copper wire to connect curbside fiber to residences, Verizon spent \$1 billion last year to lay fiber all the way to the customer's doorstep; copper be damned. Verizon now offers FTTP in 13 states. And without copper slowing things down (basic DSL over copper maxes out at about 8Mbps), content can now fly into customers' homes at speeds of up to 100Mbps. This move sets Verizon up to trump cable providers by selling supercharged, high-speed, on-demand video.

Beyond provisioning and supporting these products and services, Kheradpir and his group are dreaming up new products themselves, such as Iobi, a service that marries the public telephone network with the Internet. Iobi allows customers to link all their devices—home and work phones, PCs, televisions, cell phones and BlackBerrys—so that they can access and control content stored on any single device from whichever one they have at hand. Iobi customers could, for example, use their office PC to screen calls made to their home phone, taking just those they want on their office or cell phone.

According to our survey on IT-enabled innovation, a supplement to our "State of the CIO" research, 65 percent of CIOs said that bringing innovative business ideas to the table is a significant (if not dominant) part of their jobs. Kheradpir certainly feels that way. The Iobi concept sprang from a conversation between him and Shadman Zafar, now a senior vice president who runs e-services and architecture for Kheradpir. In 2000, Kheradpir sketched the idea on a napkin for the head of retail, marketing and sales. Multiple prototypes later, Iobi launched in fall 2004 in New England and New York City.

To speed Iobi's journey from napkin to launch, Kheradpir adapted a process he borrowed from the venture capital world. By

pushing for fast prototypes in 30-day cycles, he could course-correct Iobi as it was being developed. He claims that almost every recent idea that's had a significant impact on Verizon's business has gone through this process (see "Creation on a 30-Day Cycle," Page 58).

Kheradpir's ability to generate ideas and see them through is something his boss, Lawrence Babbio, vice chairman and president of Verizon's Telecom Group, values highly. "This year's CIO is somebody who is as creative as the marketing people, as aggressive as the operations people and as much in control as the financial people," says Babbio. "Shaygan does all those things."

In short, Kheradpir gets things done, even if it means sacrificing some sleep in the process.

All Aboard the Innovation Express

On the 39th floor of the Verizon building, morning fog obscures the view of lower

Manhattan as 11 people crowd onto the sofa and upholstered chairs in Kheradpir's office. It's 8:30 a.m., and this is the first in a series of annual IT program kickoff meetings he holds with his top IT managers. Kheradpir has given Zafar and his e-services and architecture group two hours to update him on a viciously long agenda emphasizing new products invented and developed by Verizon IT.

Kheradpir wastes no time on chitchat. (His assistant, Lori Meyer, admits that she knows next to nothing about his life away from the office, and after his latest vacation coaxed from him only the fact that it was "great." She later learned that he threatened to check the family out of their hotel in Jamaica upon discovering that it had only dial-up Internet access.) He wishes everyone a happy New Year and thanks them for putting together an impressive demo event at the International Consumer Electronics Show in Las Vegas the previous week. Then, he dives into the first agenda item, extending Iobi beyond New



Verizon CIO Shaygan Kheradpir (center) pushes his management team, including



Senior VP Shadman Zafar (left) and Adriana Rizzo (right), a senior IT manager, to deliver system prototypes every 30 days.

England and New York City.

The first slide comes up on the plasma screen on Kheradpir's wall, but Kheradpir interrupts before Zafar can begin. "I know all that stuff, go ahead," he says. When Zafar mentions a March rollout date for Iobi Professional (the version for small businesses), Kheradpir wants to know if that product is still "a little 'blah' featurewise." Right now, yes, he's told, although more features are in the works.

"So why are we waiting if it's the same thing [as the consumer version]?" asks Kheradpir. "Between now and March, there are a gazillion other features we could stuff in there. So why wouldn't we? I'm not saying do it. At the end of two hours, we'll have three times more stuff than we have time and people for. But put this on the list."

It goes on the list, but ultimately, Zafar's group will convince Kheradpir that Iobi Professional is compelling enough to ship as is. (The rollout date is eventually rescheduled for early February; more features will come

later.) In the meeting, they tell him that they're always balancing the features that people want against ensuring that the product doesn't change every month.

"Got it. Got it. Got it," says Kheradpir. Next.

The discussion moves on, and Kheradpir questions every proposed deadline, wanting to know why each can't be moved up. His modus operandi is to raise the bar and then raise it again. He admits he has to monitor himself so he doesn't push too hard. As the meeting progresses, he seems to sense that the line is approaching.

"You have 95 percent of the hard work done," he reassures the group. "But now you're sort of slowing down, and I don't know why." He offers a fractured football analogy: The team has 10 balls on the 5-yard line, and they're trying to

push them all through at once. Playing all 10 means they can't score until the second half. Instead, he advises them to pick a few, push them through in the first half, and then build on that momentum. Although Kheradpir reserves veto power, he leaves Zafar and his group to sort out where to concentrate their efforts, knowing they'll be more committed to goals they set themselves.

When Zafar's group is ready to show

The INNOVATION Gap

71%

of CIOs say innovation is part of their company's core business strategy.

but only

52%

have assigned responsibility for R&D within the IT department.

CIO RESEARCH



Shaygan Kheradpir

TITLE: CIO

COMPANY: Verizon

REPORTS TO: Lawrence Babbio,
Vice Chairman and President,
Verizon Telecom Group

I.T. STAFF: 7,000

BUDGET: \$1.5 billion

EXPERIENCE: PhD, Electrical Engineering, Cornell University. President, E-Business Group, Verizon, 2000–2002. From 1987–2000, held a variety of positions at GTE, including vice president of IT, Enterprise Systems, 1998–2000; assistant vice president, IT, 1996–1998; vice president, GTE Labs, 1994–1996.

PERFORMANCE MEASURES:

- Delivery of IT systems on time and within budget
- Satisfaction of internal customers
- Meeting cost and revenue targets for Verizon Telecom Group

Kheradpir the latest prototype of another IT invention, the Verizon One phone, Kheradpir doesn't want to waste time on slides. He heads straight for the device and immediately expresses doubts about its usability because he can't read what's written on its chrome buttons. He picks up the phone's stylus and begins tapping on its PDA-like screen, pleased that its sensitivity has improved. The screen will enable one-click dialing from an Iobi address book or Super-Pages (Verizon's online directory), and it will let users view maps, local movie show-times and other content. The device also includes a plug-and-play wireless router to link home PCs, plus a DSL modem.

"This thing is gonna win, unless we screw it up," Kheradpir says. But he isn't ready to pronounce it a go. "I'm not satisfied at all with the ergonomics," he says. "We need to go into startup mode, get real users, lock them in a room with a bunch of our smart people and have them use, use, use and tell us what's confusing."

Zafar's group, in coordination with the retail group, is already doing usability tests on Verizon One prototypes in Dallas and Boston, but Kheradpir wants a war room. That means that project leaders, developers and designers will work together in one open room lined with whiteboards. Every few hours, everyone will stop to update the group on where they are. Goals are set for the next few hours, and everyone goes back to work, often well into the night.

"You have to have a war room to break through," says Kheradpir. "The last 10 to 20 percent of a major project involves very fine details that cross boundaries and are hard to capture and understand if you just work in a business-as-usual process. Everyone has to see the same thing in real-time."

Kheradpir tells Zafar's group to make Verizon One "totally instinctive," urging them to put "restaurants near you" or "movies near you" right on the display screen. His staff objects, saying they have to aggregate things under an options menu

because users won't want to scroll through 40 things to find what they want. Side conversations erupt, but Kheradpir silences them swiftly.

"Mike, Luis..."

"I'm listening," says Mike Naggar, director of services infrastructure and project leader for Verizon One.

"I'm giving a problem statement," says Kheradpir. "Out of the box, this has to put smiles on people's faces. There are a number of aces we're not playing. Think of it as an appliance, not as a PC. We want customers to get there naturally themselves." By putting a couple obvious things right on the display screen, customers will understand that they can easily get the screen to display what *they* want to see.

The device is slated to ship in Q2 of 2005, and the team says it'll be ready.

"We've got a winner here, man," says Kheradpir. "We've just got to close the deal."

"It's at the 5-yard line," says Naggar.

"This is one of those," Kheradpir nods.



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The CIO Enterprise Value Awards honor technology-enabled business achievement. Winners will be chosen from entrants who submit completed application forms to *CIO* magazine by April 15, 2005. Entries will be judged on the value of the achievement resulting from the technology investment and the degree to which it serves the organization's mission. Judges are looking for initiatives that have had a broad and significant impact on the enterprise as a whole.

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- The system must have been operational prior to April 1, 2004.
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- IT vendors may submit applications for an IT system that they used internally to help run their businesses better. They may not submit a product or service that they sell to CIOs.
- Entrants will apply within one of 12 industry categories:
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Why Nighttime Is the Right Time

It's a little after 1 p.m. and Kheradpir is standing behind his desk, eating a bowl of chicken soup that Meyer brought him from the employee cafeteria. (The accompanying bag of chips will go untouched.) Top managers of the retail systems group, led by Fari Ebrahimi, now fill his sofa and chairs, and Kheradpir is telling them that it will be a major disappointment if customers aren't using Verizon's website or self-service voice portal 40 percent of the time they do business with Verizon in 2005.

"Are you guys satisfied you're tuning this thing fast enough?" he asks, referring to the voice portal. "Every night at 10 p.m., are you going over what you'll do tomorrow?" He exhorts them to get field people talking with development people every night so they can improve voice portal functionality every day.

Kheradpir is a big fan of late-night conference calls as projects near completion. For most developers, that might translate into late nights a couple months out of the year. Zafar estimates that Kheradpir took part in late-night meetings every night for almost nine months last year. The primary purpose of these meetings, Zafar says, is to cut red tape

so that projects can hit deadlines. In fact, many of the to-dos are assigned to Kheradpir.

"I usually help with cross-departmental things," says Kheradpir. A developer might need the data center people to open a firewall so that he can make a fix; a call from the CIO can make that happen in two hours instead of two weeks. But occasionally, Kheradpir dives into the code himself if a team is stumped by a technical problem.

Kheradpir believes the nightly virtual meetings help teams keep their projects on track. "The more people meet together around a very focused set of numbers and objectives, things start clicking, and the machine starts moving," he says. "The objective for me is, 'OK, guys, baseline where we are exactly, and what do we need to do between now and tomorrow night to be in a better place?'"

In 2003, when Kheradpir's group first launched Verizon's repair line voice portal with a new natural language speech engine, customers kept hitting zero to get to a live operator. At nightly conference calls, Kheradpir and the developers went over the day's metrics to see where callers were dropping off and listened to voice clips from just before the drop-offs. Then the developers tuned the call tree design each day, or

tweaked the recognition functionality until the numbers started moving in the right direction, with fewer and fewer callers transferring to the live operator.

Barring a legitimate family conflict, developers are expected to dial in whenever their team has a late-night session. If a project runs into an issue that might jeopardize hitting the deadline, "people who say, 'That's not my problem, I just work 9 to 5' typically don't thrive in the organization," says Kheradpir. "Leaders don't generally want them on their teams, so they don't get ranked high." According to Kheradpir, up to 10 percent of his people are moved out each year (some are transferred within Verizon; some leave; some are retrained) to make room for new talent. But top-performing developers, especially those right out of college, think it's great being in on conference calls with the CIO. "Most doers on the team actually like it," says Zafar. "They see the support and excitement from management and see that it goes all the way to the top, that these guys are serious."

The Wall of Shaygan

The Verizon building is a block from Time Square's neon jungle, but a coffee-table-size

CREATION on a 30-Day Cycle

Verizon's process for ensuring innovation borrows from the venture capital world

If you want real innovation, forget about continuous improvement, says Verizon CIO Shaygan Kheradpir.

At Verizon, Kheradpir primes the innovation pump by looking for places where IT can have a breakthrough impact on the business. He then challenges his IT group to come up with new ideas in those areas, which in turn set off rounds of discussion and brainstorming. When a potentially big idea emerges, Kheradpir takes it to a line-of-business head or to

his boss, Lawrence Babbio, vice chairman and president of Verizon's Telecom Group. If they agree that the idea is worth checking out, Kheradpir takes a venture capital approach by giving a team 30 days to come up with a prototype, putting aside any constraints that might get in the way, such as scalability, usability and functionality issues.

"Show me what this could look like," Kheradpir tells the team. "Bring it up on one leg, hobbling."

If that version shows promise, the team gets another 30 days to expand the prototype, with a few constraints added to the mix.

Projects move forward in 30-day cycles. If they survive, the cycles expand to 60, then 90 days as more constraints are added and the projects move into operational readiness tests.

"Even though we're looking for breakthrough results, we make sure [teams] execute incrementally so we can course-

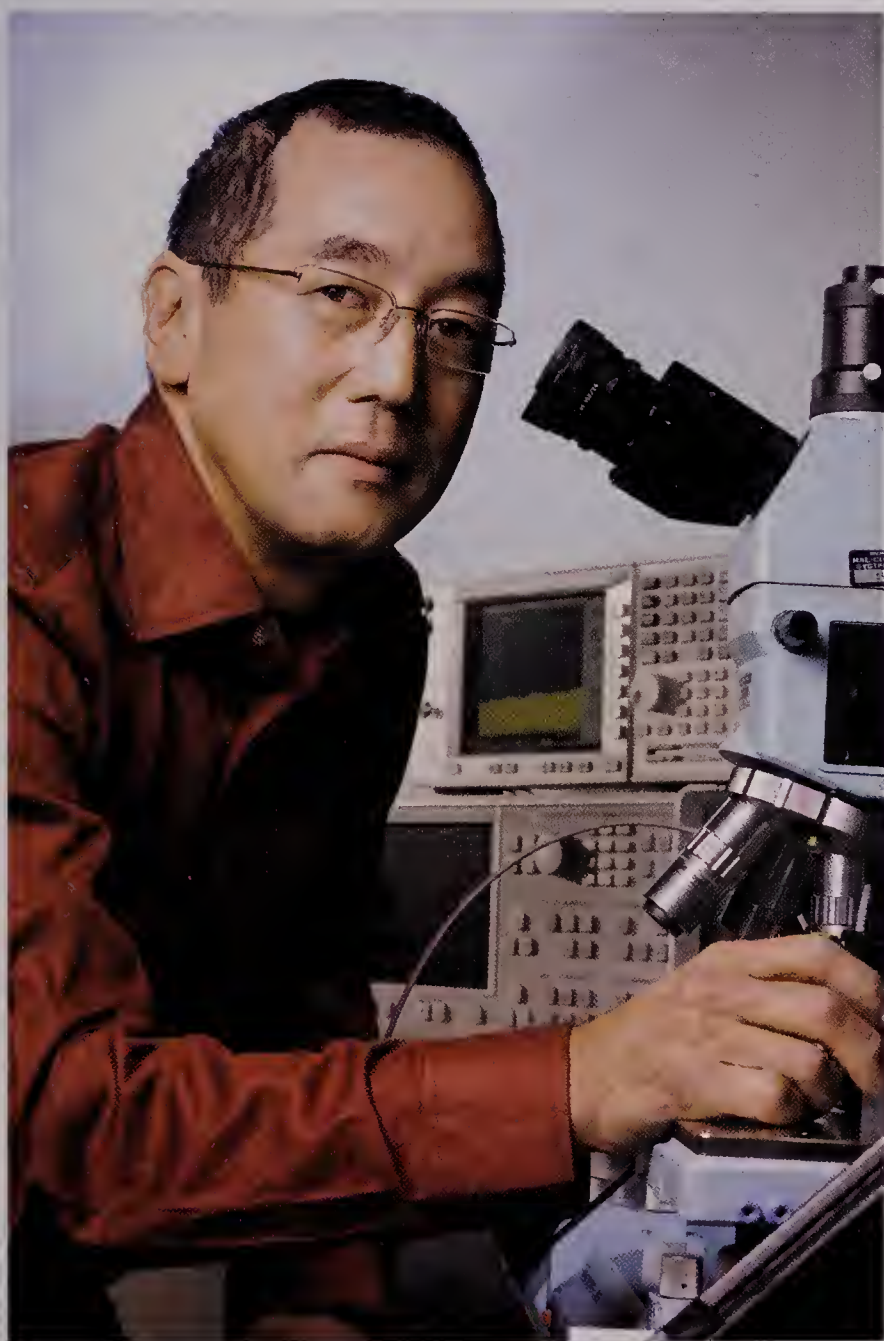
correct," says Kheradpir.

Although VC firms ditch ideas that don't pan out after two or three 30-day cycles, at Verizon, they're not automatically killed. "We look at it as a learning experience," says Kheradpir. "We backtrack and try again because we still need breakthrough results." Generally a dozen new ideas are in the innovation pipeline at any time; Kheradpir estimates that more than half make it all the way through to execution.

—A.D.

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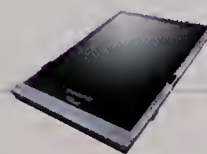
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plasma screen on the wall in Kheradpir's office is the billboard that matters most at headquarters, and everyone in IT is happiest when it glows a reassuring green. The Wall of Shaygan, as everyone calls it, is a highly sophisticated executive dashboard that Kheradpir and his IT team designed so that he could keep an eye on IT systems and business metrics throughout the day. If all's well, graphs showing Verizon's interaction with the market (call center, website and voice portal volumes, sales and revenue) trend in favorable directions, and grids representing more than 100 systems remain green. A yellow box

means a few users are having problems with a system; orange means a lot of users are having problems; red means a system is out.

Within five minutes of the appearance of a red box, which often happens on Mondays after weekend upgrades and software changes, managers who work on the system that's down are expected to dial in to a conference or bridge call to hammer out how to resolve the problem as quickly as possible. Kheradpir can click on a red box and drill down for details in the real-time written log of each bridge call. If he senses that a problem could have a pervasive impact, he might

jump onto the bridge himself. "I want to make sure we have the deepest experts on it if I get a sense of the gravity of the situation," he says. If he's not in the office when something goes red, he gets an alert on his BlackBerry, with a link to the bridge log and the dial-in number. At 4 a.m., Kheradpir has found himself tracking down an expert in Australia to resolve a technical glitch and get a system back in business by 8 a.m.

"We sometimes pull all-nighters," says Kheradpir. "Verizon is so big, so vast, so many things happen. These days there's no margin for error. The business runs around the clock, so we've got to go around the clock."

Throughout his annual kickoff meetings with his IT managers, Kheradpir refers often to the Sea of Green, that happy state when everyone in IT can concentrate on innovation instead of putting out fires. "Keep it green" has become IT's mantra. For Kheradpir, time spent on the bridges resolving problems is time taken away from his real job: moving the business forward.

9 KEYS to Innovation

Shaygan Kheradpir's formula for developing new ideas and making them happen

- 1} **DEFINE A COMPELLING GOAL** :: People's attention and energy follow their passions. Your staff needs to feel that they're working to make something better, not just to earn a paycheck.
- 2} **EMPOWER PEOPLE TO PURSUE THAT GOAL** :: Give people autonomy and responsibility, as well as the resources they need.
- 3} **MEASURE PROGRESS** :: Kheradpir's group, for example, develops detailed scorecards with business clients at the beginning of the year. They're posted on the IT intranet, and the results are reviewed quarterly. Each employee needs to commit to which of the scorecard's metrics they're working to improve.
- 4} **ENCOURAGE NONLINEAR THINKING** :: Put staffers "two in a box," as Kheradpir calls it, by asking two people with different skills from different groups to work together to attack a problem.
- 5} **BUT EXECUTE IN A LINEAR WAY** :: Advance new ideas by asking for prototypes to be developed in 30-day cycles. As big projects hit the homestretch, hold daily status meetings and set goals for the next 24 hours.
- 6} **THINK FLAT** :: Business can move more quickly without bureaucratic layers. Having all the major players on a project working together in a war room improves communication and coordination in the final stages of a project.
- 7} **BE HANDS ON** :: Cultivate relationships with employees on the front lines so that you can understand their issues and get direct feedback on how systems are working.
- 8} **HIRE TOP TALENT ANNUALLY** :: Most of what you learned in school is already outdated. Bring in new talent from top schools each year.
- 9} **REMOVE BARRIERS** :: Encourage staff to identify red tape, then cut through it for them. That's your job. -A.D.

A Long Day's Journey

At 6:45 p.m. Kheradpir leaves to meet his wife and kids for dinner at ESPN Zone in Times Square. By 9:30 or 10, he's home, IMing his staff and reviewing (and questioning) the day's metrics.

He calls it quits around 1 a.m.

"Frankly, I don't know any other approach," he says. "I really have to understand the subject matter to be able to manage performance, to be able to explain to others what we're doing, why it matters."

And for Kheradpir, Verizon's business matters deeply. In fact, Zafar's team members say it's hard to believe that Kheradpir thinks about anything else, ever. "The biggest thing I worry about every day is how can we go there faster, develop more compelling products, drive revenue, bring costs down, delight customers," Kheradpir says. "Every night I think we can do more, do more, do more."

"My big challenge," he says, "is to figure out when enough pressure is enough." **CIO**

Senior Editor Alice Dragoon can be reached at adragoon@cio.com.



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Ken Erdner,
VP of technology and IS,
Old Dominion Freight Lines

EVERYONE

Wants Something from Ken

Old Dominion Freight Lines' CIO is competing against companies with more money and manpower than he has. So he has to work harder and smarter than they do.

BY STEPHANIE OVERBY

If nothing else, Old Dominion Freight Lines, a 70-year-old trucking company, is diverse, a collection of seemingly ill-fitting parts and fractious forces.

Its president, for example, expects his company to be as technologically innovative as its Fortune 500 competition. At the same time, Old Dominion (OD) recently acquired a trucking company in which the workers had rarely used computers and would rather not learn, thank you very much.

Since its founding in 1934, Old Dominion has been owned by the Congdon family, and they like to run it in their own, relatively idiosyncratic way. But this is also a public company whose thousands of shareholders expect and demand not only a good return on investment but also a strict adherence to federal regulations.

Old Dominion has many IT managers who bring years of experience at other companies to the office, but it also has others who joined the department straight out of high school and know only one way—the OD way—to do things.

And in the middle, charged with making all this work, is Ken Erdner. As vice president of technology and information services at Old Dominion, an \$824.1 million less-than-truckload (LTL) carrier, he juggles the often contradictory needs of these diverse constituencies for more than 10 hours each working day. But that's only one of Erdner's challenges. He also must meet the rapidly increasing IT needs of the Thomasville, N.C.-based company

The events in this story occurred on Jan. 6 and 7, 2005.

AGENDA 2005

• Develop new wireless capabilities for salespeople in the field

• Find and hire employees with hot skills

• Improve the revenue-to-IT-employee ratio



with relatively minimal resources—a small staff of 80, limited funding and even less time. And he has to manage his \$10 million budget well enough to compete with competitors who have more than 10 times his resources.

But remarkably, Erdner, by all accounts, is doing just that. Since David Congdon took over as president in 1997 and put Erdner in charge of IT, Old Dominion has been growing at double-digit rates. With revenue soaring 23.5 percent last year, this rise has left its biggest rivals—Yellow, ABF and Con-Way—in the dust. And during Erdner's tenure, the company's attitude toward IT has evolved. In 1999, he was promoted to vice president and given a seat at the corporate table, a first for a CIO in Old Dominion history.

None of this—the growth, the transformation, the efficiency—has been easy to achieve, but Erdner (with the help of his close-knit staff) is getting it done through a combination of hard work, a good sense of humor, a clear sense of purpose and a minimum of three cups of strong coffee a day.

Faster, Faster, *FASTER!*

Erdner knows his boss put him in charge to move this old-fashioned company in a new direction, to grow without sacrificing the speed and agility possible in a smaller company. "I try to instill a sense of urgency," says Erdner. But doing things fast and right with limited resources is a constant challenge.

Erdner likes to put a positive spin on things. With 80 people in IT supporting more than 8,300 end users (nothing is outsourced), he knows that his people are stretched thin. But hey, things aren't as bad as they were for Wichita Southeast Kansas Transit (WSKT), the \$68 million trucking company Old Dominion acquired on Jan. 15. "They had 500 full-time employees and only *two* people in IT," Erdner relates. "We've acquired six companies since I've been here, and they *all* had fewer IT people than we've had."

Erdner knows his company is on the low end of IT spending in the LTL industry. At 1.3 percent of revenue, he's spending less than half of what his Fortune 500 competitors spend—and that includes the OD phone bill that somehow found its way into Erdner's

budget and stuck there.

Time isn't on Erdner's side either. Today, Thursday, Jan. 6, is typical. He's in before 8 a.m. and won't leave until well after 6 p.m. Paperwork and unanswered e-mail pile up as he shuttles to an average of eight meetings a day; his only break is a quick trip to Subway for lunch. He has to sign every invoice for his department. He has no assistant. (Neither does the CEO; it's the OD way.) Working holidays and long weekends are the norm because that's when the company (open 24/7 every day except Christmas) slows down enough to make major IT upgrades. Erdner has been in the office every Thanksgiving since he started.

His team works just as hard, maybe harder. Consequently, Erdner interviews each job candidate, conducting an average of one interview a week. "It's the most important thing I do," he says, even though he plans to add only 20 workers over the next five years. He admits that he'd love "the luxury" of another Web programmer and another worker in his imaging department. But he hasn't been able to make the numbers work yet. Maybe next year.

Money isn't Erdner's only problem. After a long search, OD recently hired a programming analyst to work on the SAP HR implementation scheduled for Q2. "It's hard to find SAP experience," says Erdner, "except in India." And he's ruled that out. Erdner believes only his own staff knows the intricacies of the business well enough to do the work.

But by his own admission, Erdner's people had "zero experience" before recently installing SAP financials, which meant he had to provide Applications Development Manager Sheila Burwell and her staff with a lot of outside training. That eviscerated the budget for everyone else. "I always ask for lots of education in my budget, but my boss will only allow so much," says Erdner, who tries to get everyone out for a week of training at least every 18 months.

Implementing SAP in-house also meant that Burwell's team worked double-time to get the system up, on schedule, by Jan. 1.



Ken Erdner

TITLE: VP of Technology and Information Services

COMPANY: Old Dominion Freight Lines

REPORTS TO: David Congdon, President and COO

I.T. STAFF: 80

BUDGET: \$10 million

EXPERIENCE: B.S. in computer science, Youngstown State University; credits toward an MBA. Application manager, Old Dominion Freight Lines, 1997–1999. Various IT staff and management positions from 1981–1997.

PERFORMANCE MEASURES:

- Quality of the system's infrastructure, including uptime, response time, access and availability
- Quality of application implementation, including testing and integration
- Delivery of ROI or competitive advantage from IT systems

Burwell was so overloaded that she couldn't keep up with managing her own three direct reports. That, too, fell to Erdner. "She couldn't focus," explains Erdner, who volunteered to be his department's fire coordinator because he couldn't bear asking anyone on his staff to be the last person out in a disaster.

All of Erdner's six direct reports would love to have more help. That's especially true today, as Marc Weiler, the manager responsible for getting 13 recently acquired service centers in the Midwest up and running in two weeks, provides an update at his regular 8:30 a.m. Friday meeting with Erdner. A paralyzing ice storm in Kansas yesterday kept much of the computers and telecom

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equipment Old Dominion sent from getting to the docks. Luckily, Weiler's guys (he has a team of three) were ahead of the game before the storm hit. So, he explains, "We're *ahead* of schedule," even though, in light of the storm, "we're *behind* schedule." Both laugh before Weiler moves on to update Erdner on the other 10 projects on his plate, including researching new wireless devices for salespeople, getting contract negotiations under way with MCI ("We could save the company \$50,000 a month," says Erdner) and upgrades to the communications network.

The wonder is not that Erdner and his team don't fall behind but that they keep moving ahead. In January, for example, they implemented SAP Financials and Fixed Assets, introduced a more robust handheld for their drivers, investigated a new wireless device for the sales staff and integrated WSKT's systems with their own. In fact, Erdner feels he and his team are delivering everything the company needs—just not fast enough. The new driver handheld, for example, which took nine months, could have been delivered in half that time if there had been two developers on the project instead of one.

"I'd love to have more resources," says Erdner wistfully, "just so we could get the same things done faster."

So Many Customers, So Little Time

Even if Erdner got a bigger staff, he'd probably be just as busy. Possibly busier. He wants to know about everything because, he says, at any moment he could be asked a question by any one of his constituents, and he wants to

have a good answer. And in Erdner's book, "I don't know, but I'll look into that and get back to you" is not a good answer.

One of his most important constituents is his boss, the president and COO. David Congdon knows his company's technology. He knows how many AS-400s Old Dominion has and what runs on each. He knows how much each computer costs. That makes him a very tough boss. Congdon is vividly aware that OD's growth was achieved while spending less than 2 percent of revenue per year on IT. And he doesn't really care that the other LTL carriers spend more. "[Erdner] runs a lean shop on a lean platform, and he does a great job for us," says Congdon.

Congdon is Erdner's most important customer, but not his only one. Although the company employs more than 10,000 people across the country, just 400 of them are at corporate headquarters. But that's where most of the technology is. Headquarters absolutely depends on IT systems and support to get things done. The more IT systems it gets, the more it wants. And the instant something goes wrong, the managers run right to Erdner or one of his employees.

Because of this high level of involvement, from his boss to his users, Erdner says he has to keep himself in the loop. He meets with a different manager every morning at 8:30 to get updates on everything from the status of big projects to minutiae such as a new scanner someone wants to buy. Every Friday, he meets with his programming analysts. Today, the first Friday of the month, he brings his 35 programmers and analysts into the big, first-floor conference room at 9 a.m. One by one, each programmer updates Erdner on every

nuance of the code he or she is developing. It lasts a good hour and a half. Erdner, a former programmer, listens intently, fueled by the giant glazed bear claw his direct report Burwell brought in especially for him. (Everyone else gets bagels.) "I'm a big-picture guy now," he insists. "But I like to hear the details."

"He's very hands on, and I don't blame him," says Senior PC and Networking Manager Lisa Boles. "If anything happens, he doesn't want to be the last to know." It's not uncommon for detailed IT questions to get thrown at Erdner by company execs in the two-hour Old Dominion executive team meeting held on Mondays or by a business user at the coffeemaker. Why is the wireless coverage so bad in Missouri? What happened to the website on Friday at 10:30?

"Luckily, I haven't been surprised by a question in a long time," Erdner says.

But that level of involvement can take its toll. "I get frazzled sometimes," he admits.

"One of his weaknesses is that he just has too much going on," says Shawn Pope, an operations and help desk manager who has worked in Old Dominion's IT department for 22 years. "I understand why he wants to be involved with everything, but there's just so much. He's said he'll work on it, but I don't think that it'll ever change."

Keeping Up with the FedExes

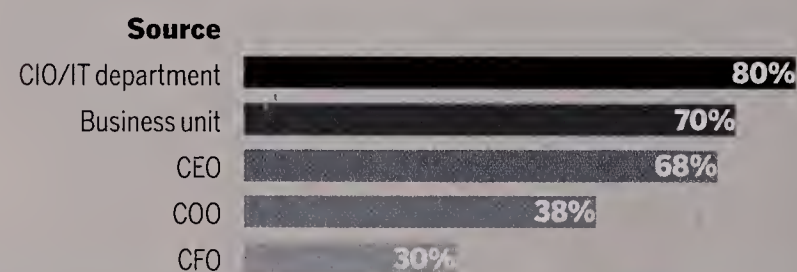
Although Old Dominion has more than doubled in size since Erdner climbed aboard in 1997, it's still on the small side in comparison with the other LTL leaders. That's why it believes it has to be smarter and more innovative to compete. And competition is always top of mind for Erdner.

He begins his monthly staff meeting with his six direct reports this Friday afternoon by going over the latest data on operating ratios (ORs), the leading industry indicator. ORs reveal how much a company spends to earn one dollar of revenue. Old Dominion's has improved for the past 13 straight quarters, and Erdner announces that for the fourth quarter of 2004, it's 91.4, meaning the company's making nearly nine cents on every dollar of shipping. "It's the best we've ever finished since I've been here," he tells his team. "And considering our growth, that's tremendous."

Central Trucking, a Texas-based carrier that once did more shipping in that state alone than Old Dominion did in total, came in at 110 in Q3 of 2004, meaning they were losing a dime on every dollar of revenue. "They're

IDEA Generators

CIOs rank themselves (and their IT departments) as the top source of ideas for business innovation. They rank CFOs last.



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CIO RESEARCH

Fr: no good idea unsaid

To: no good idea unshared

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“We’ve acquired six companies since I’ve been here, and they *all* had fewer IT people than we’ve had.”

—Ken Erdner

in trouble. If you go out to their chat rooms on the Web, their employees are saying, We really hope Old Dominion buys us,” Erdner says to a round of laughter in the conference room. But he goes on to note that three competitors are doing better: “ABF rebounded nicely in Q4 to 90.5. And Con-Way is...oh, wait...we beat Con-Way,” he announces. “Yahoo!”

There are several Goliaths in the LTL business. Most notably, there’s FedEx (although LTL is only about 11 percent of its business), which has nearly 5,000 IT workers on staff. Other Fortune 500 competitors include Con-Way, with 287 IT employees; Yellow Freight, with 361; and ABF, with 200 (according to the most recent available figures). “The competition?” says Erdner. “Oh yeah, their IT staffs are *huge*.”

To compete, Erdner must stay up on the latest technology. “I just can’t find the time,” says Networking Manager Boles. “He’s always throwing articles into my inbox with a note: ‘Hey, maybe there’s something here for you.’”

But keeping up with technology is only a start. Erdner must also make sure his staff innovates. Eighty percent of CIOs who responded to our survey on IT-enabled innovation (a supplement to our “State of the CIO” research) cited the IT department as a source for business innovations, over business unit leaders or their company CEO. And that’s the

case at Old Dominion. “Erdner is not your typical IT person,” says Vice President of Field Services Terry Hutchens. “He’ll challenge you and say, I’ve got a resource. What can this person be working on for you? Or, I’ve got an idea for how we can make you more efficient.”

Time to Blue-Sky

New ideas tend to come largely from two yearly offsites and the monthly Thursday morning meeting Erdner has with his management staff. In contrast to the analysts and programmers’ meetings, this one is pure blue-sky. Today, Erdner says he’s divided Old Dominion’s revenue, and that of its top four competitors, by the number of IT employees, to create a new metric: revenue-to-IT-employee. Currently, the big guys are all between about \$5 million and \$7 million of revenue per IT employee. Old Dominion is making \$10 million per IT employee. Looking 10 years out, Erdner has created a plan for hiring 42 more IT staffers (in areas from

networking to wireless to new technology) while increasing OD’s revenue-to-IT-employee figure to \$25 million. His six direct reports don’t immediately comment on the fact that his plan is predicated on Old Dominion more than doubling its revenue per IT employee over that same time. Instead, they tease him about why Boles (who Erdner refers to as his “bestest buddy”) and Senior Applications Manager Barry Craver are slotted to get the most help in 2015.

Then, a discussion on the best wireless devices for salespeople in the field leads to the thought that maybe they need something else entirely. The sales application they use most is way too complicated to access on the Palm Treo 650’s tiny keyboard. Wayne Capwell, Erdner’s e-commerce manager, had just been talking about his research into Web services (in the hope that Erdner would give him the green light to invest \$50,000 in a discount version of IBM’s WebSphere development tool). Could we create a Web service that would enable the salespeople to query the system from the road through an e-mail and a simple subject line? Craver wonders aloud. Maybe they could type in “customer info” and the customer number and the app would retrieve the information and send it back to the salesperson via e-mail.

“If we do something with Web services,” Erdner interjects, “are we going to have to add another person?”

“Yeah,” says Craver. “And while we’re on the subject, can we get back to your numbers for 2015? Aren’t we going in the *wrong* direction with this revenue-per-IT-employee figure?” Erdner could double his staff over the next 10 years and *still* have a better revenue-to-IT ratio than the competition—a more attractive proposition to his direct reports.

A few of the ideas that have emerged from these sessions have proved significant. Most never turn into anything. They may be too costly, or they may deliver too minimal a return. But when you’re running as fast as you can just to keep up, you can never stop.

Just ask Ken Erdner.

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Robert Taylor,
CIO, Fulton County, Ga.

Where There's a Person, There's a PROBLEM

Like it or not:
When you're a
public-sector CIO,
the public will have
a lot to say about
everything you do

BY ALLAN HOLMES

At 6:45 a.m., it's still dark outside Robert Taylor's corner office in the Government Center building on the outskirts of downtown Atlanta. Taylor, CIO for Fulton County, Ga., is hunched over his keyboard, scrolling through the e-mails that he received yesterday and was unable to answer from home on his BlackBerry—one of the last things he does before going to bed every night.

Taylor finishes, pushes the keyboard away and walks over to a conference table where Terry Gates, the county's CTO, is waiting for him.

"OK, let's get started," Taylor says. "There seems to be an issue at the library?"

For the next hour and a half, Taylor and Gates, who Taylor hired in November from Atlanta-based Home Depot to manage day-to-day technology operations, discuss nearly a dozen issues—including switching the county library PCs off the old and insecure state network to the more secure county network, service-level agreements for the county's help desk, an inventory of the computer room, voice over IP, videoconferencing, ways to satisfy the county commissioners' desire to increase investments in minority organizations, the need to expand a telephone system at a nearby county building, and a calendar for IT maintenance and upgrades that all county employees can view.

Despite the rainbow of tasks and challenges that come up, the discussion turns—

The events in this story occurred on Jan. 10 and 11, 2005.

AGENDA 2005

∴ Convince the county that IT is core to good governing

∴ Get funds to upgrade the prisoner-tracking information system

∴ Centralize IT for the county and fend off attempts by departments to do their own IT





Robert Taylor

TITLE: CIO

ORGANIZATION: Fulton County, Ga.

REPORTS TO: Tom Andrews,
County Manager

I.T. STAFF: 145

BUDGET: \$24 million

EXPERIENCE: MBA, University of Georgia; coursework for PhD in computer science. Program manager, GeoLogistics International, 1998–2000; director of IT, provider systems, Blue Cross Blue Shield of Georgia, 1996–1998; project manager, Delta Airlines, 1995–1996. IT staff and management positions with health-care and academic institutions, 1974–1995.

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- Delivery of IT systems on time and within budget
- Satisfaction of customer expectations

as most discussions in Taylor's office inevitably do—into a conversation about staff:

"Is he a good candidate for a project manager?"

"I'm concerned he takes over and pushes people out of the way."

"He's spread too thin."

"He's only coasting and waiting to retire."

Since becoming CIO in 2000, Taylor has implemented the county's first IT security plan, updated and upgraded the county's hardware and software, and perhaps most important, secured a seat at the county management table—the first Fulton County CIO to do so. But he constantly worries about the many people on his staff who lack project management and technology skills and suffer from the bureaucratic lethargy (endemic to government) that discourages innovation. He also worries about his staff's age: A quarter of his 145 people will be eligible for retirement in the next two years. And then, there's money. Right now, Taylor has 10 unfilled positions because a number of staff members retired at the end of 2004, and until recently, he'd been operating under a hiring freeze. Still, even with the freeze lifted, Taylor knows that finding the talent he needs will be difficult.

The Public-Sector Squeeze

Taylor's situation is not atypical. According to CIO's "The State of the CIO 2004" survey (www.cio.com/040105), out of 11 possible choices, government CIOs named "lack of key technical skill sets within IT" as one of their five biggest barriers to being effective. Not so for Taylor's private-sector counterparts, who ranked a lack of IT skills as the eighth biggest barrier to effectiveness.

As is the case in the private sector, Taylor faces a tight budget (number two on the list of barriers for both private- and public-sector CIOs). Taylor's budget for 2004 was \$24 million, a slight increase from the \$21 million he had in 2000, the year he was hired. But most of that increase came from a 2004 reorganization that transferred 30 positions and related contracts to his department. The lines of business Taylor is responsible for increased from 20 to 42. After all that figures in, Taylor argues that his budget actually has *decreased* over that time.

Despite these hurdles, Taylor has set some lofty goals for his department. He wants Fulton County to be one of the leading IT-managed counties in the nation. And from the looks of the awards from trade magazines such as *Governing* and *Computerworld* (a sister

company to CIO's publisher) that sit on his office shelves, it seems he's had a measure of success. But to do so, he says, he's had to "bang the hell out of vendors to squeeze every dollar out of contracts," force a cultural change within his IT shop, and convince elected officials and department heads that IT is core to the job of running a government.

"This job is like walking a tightrope, carrying a balance bar with a deadweight on one side and a live animal on the other and knowing you have to make it across the canyon with no net," Taylor says. "But if you make it to the other side, you know it'll be worth it."

A Personnel Problem

Taylor wraps up his meeting with Gates at 8:30. He's already behind schedule, and he doesn't like it. Two of his top managers—Sandra Lawton, deputy director of applica-



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tions, and Richard Garrett, assistant director for applications—arrive to discuss an appeal filed by an employee who was fired last August for a performance-related matter. The former employee claims the firing was discriminatory on several grounds, including religion and national origin. Given the statements of his managers, Taylor is reluctant to hire the individual back.

Taylor and the managers discuss the former employee's charges relating to current

rules for time sheets, attendance and access to various secured areas within the department. The discussion centers on questions that the county's Office of Equal Employment Opportunity asked in a memo about attendance, work assignments and accommodations for religious practices. Taylor's managers say accommodations were made to allow the employee to wear traditional clothing and to allow time off in the early afternoon on Fridays to observe his religion.

Micromanaging is what Taylor calls this stuff, and he says it takes away from what he would like to do—strategic planning. "These are the kinds of issues you have to deal with in government," he says on his way to the 10th floor to meet with the county manager. "I have a lot of issues like these. If I didn't have to deal with all this, I would be twice as productive."

(A few weeks later, the county Personnel Board rules that there is no evidence of discrimination but votes to reinstate the employee, suggesting that termination was too harsh a disciplinary measure.)

The Boss and the Budget

County Manager Tom Andrews has called a meeting of his direct reports to discuss additions to the annual budget. Taylor reports to Andrews, who hired him in 2000 from the Georgia Department of Administrative Services, Technology Services division. Andrews' choice was a signal that the county was taking IT seriously. The position's title was changed from director of technology to CIO, and Taylor was the first IT chief since the position was established in 1993 to have had both academic and technological training.

The directors of health, public works, finance, budget and others attend the meeting. Only Taylor and Andrews wear suits. Taylor

has on a charcoal pinstriped three-piece suit, a white shirt with French cuffs, gold and turquoise mother-of-pearl cuff links and a red silk tie with a quiet blue design. Taylor admits to being a clotheshorse, with 33 suits and 15 pairs of shoes in his closet.

He also says he dresses this way because he never knows when he's going to run into a judge, the secretary of state, a reporter or the governor. Furthermore, he believes his suits help him project an image of the IT department as something more than just a programming shop, which is how it was viewed before he arrived. What IT does, he says, is central to the county's mission and directly serves county residents. "I need to always be in position to project a positive image," Taylor says. "Of course, to show I haven't completely sold out my south Georgia, farm-boy heritage, I push the envelope with long hair and a goatee."

Taylor listens to other department heads discuss a list of add-ons to the 2005 budget, which the commissioners will consider the following week. This, Taylor believes, will be his chance to ask for \$500,000 to modernize a jail management system to track the inmate population, which all three justice departments—the superior court, the state court and the district attorney's office—could use to access prisoner information in real-time. The old system was built in 1994 and had its only refresh in the late 1990s to prepare for Y2K. It is four versions behind and still runs on main-frame flat files. "I've begged, pleaded and waved all sorts of flags, but I haven't been able to get the funds to modernize it," Taylor says before the meeting.

The present system is ancient green-screen tech and requires users to move through more than a dozen screens to input data. The upgrade also will update the workflow application, called the Justice Datalink, that connects the prison system to the superior court, state court and DA's office.

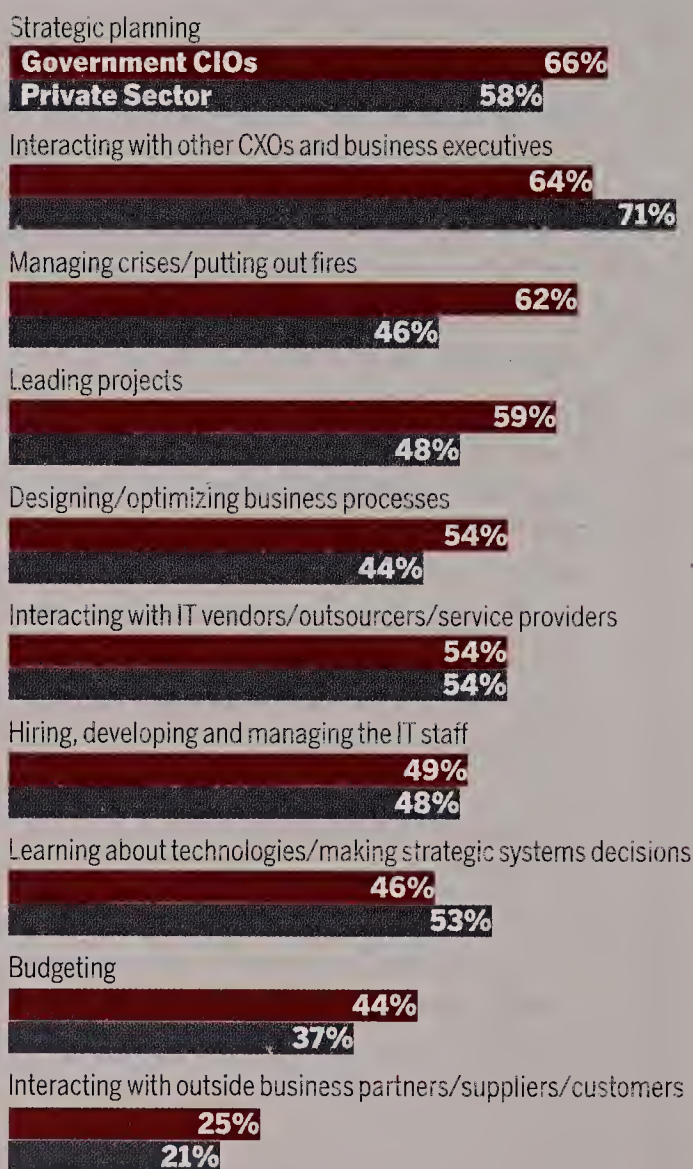
The meeting is winding down, but the county budget director has not mentioned the prison project. It's not on the list. Taylor asks Andrews if that means it isn't considered important. "If it doesn't come up, my guess is that it won't be added," Andrews tells Taylor.

On the way back to his office, Taylor is quiet.

PUBLIC VS. PRIVATE: Conflicting Priorities

Government CIOs rank the pace of technology change and the lack of key technical skill sets within IT among their biggest hurdles. Yet they spend relatively less time than their private-sector peers on staff development and more time fighting fires.

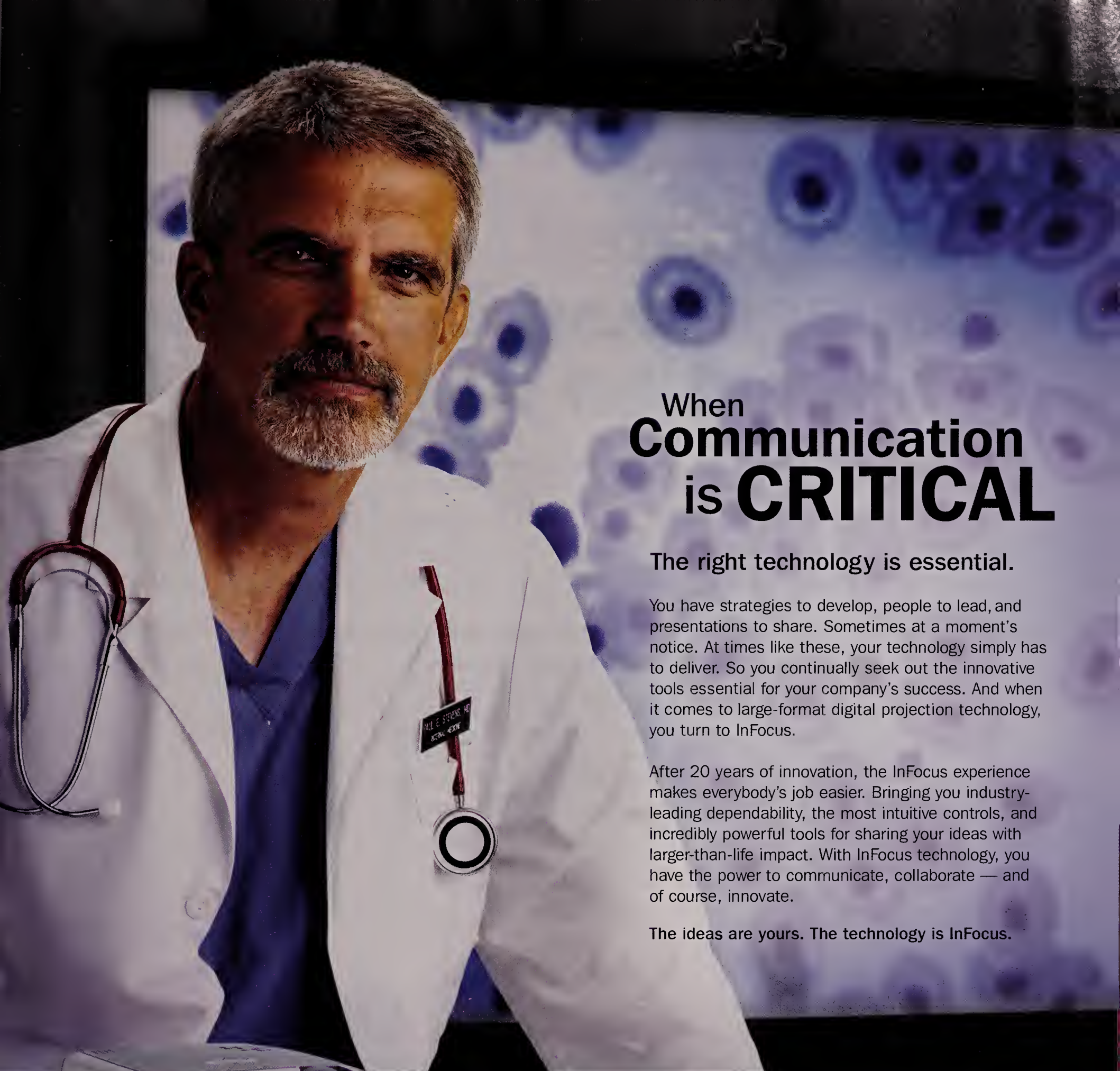
On what do you spend the most time?



Respondents picked top five.

SOURCE: "The State of the CIO 2004"

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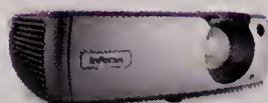
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The Resource for Information Executives

His Pal, the Vendor

After the budget meeting, Taylor has a sit-down with Kwang Kim, president of Consilium Consulting, which manages the county's databases—including Oracle, Unix and e-mail.

Before the meeting starts, Taylor explains that he has no certified database administrators on staff. The starting annual salary for a database administrator at the county tops out at \$65,000, but Taylor says he would likely have to pay more than \$100,000 for a certified database administrator. For years, Taylor has asked the Board of Commissioners to fund three positions to support database administration. He's been turned down every

arrangement. His systems are now more reliable, and if there's a problem, Taylor says his calls to Consilium are returned within the hour, 24/7.

Still, it hasn't been a completely smooth transition. An employee filed a grievance with the county's Equal Employment Opportunity office after the contract was awarded, claiming he had the skills to manage the databases. Taylor disagreed, adding that he had neither the time nor money to train someone. The EEO office ruled that the outsourcing move was not discriminatory and that Taylor, indeed, did not have the appropriate skills on staff.

The meeting with Consilium goes well,

For the duration of the meeting, Taylor has no headaches, no complaints to attend to, no budget decisions to make.

This quiet time doesn't last long.

The Project Demo Disaster

Taylor crosses the Government Center building to attend a meeting of the Criminal Justice Information Policy board, a group that meets on IT issues affecting the superior court, state court and DA's office. Taylor arranged for Tiburon, the maker of the prison information system software, to demonstrate the upgrade. Taylor wants everyone to understand what's

"I've had them follow me into the bathroom and talk to me about something that's worrying them while I'm standing at the urinal."

—Robert Taylor

time. That, and his inability to find people with the requisite skills, led to his decision to outsource the work. Taylor outsourced the county's website hosting last year and technical services in 2003.

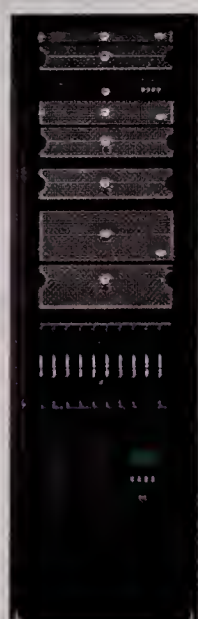
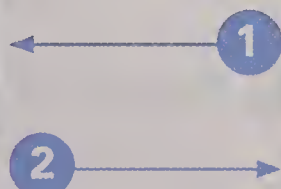
About 2 dozen companies submitted bids for the database management contract, and Taylor chose Consilium, which bid \$5.8 million over five years to manage 20 databases, and fixed another price to accommodate growth. Taylor has been pleased with the

and Taylor likes what he hears. They discuss the status of databases related to specific applications, such as justice. The county's Oracle license was scheduled to expire today, but Kim reports he received an e-mail confirming that the license has been extended for one month with no out-of-pocket money from Taylor. "That's the kind of service Kwang can provide because of his connections," Taylor says. "That might not have happened if this was in-house."

being proposed. More than 30 people attend.

On the way into the meeting, someone from the public defender's office pulls Taylor aside to ask what to do about an employee who is violating e-mail policy. Taylor says he'll get back to him after the meeting. "This happens all the time," Taylor says. "I've had them follow me into the bathroom and talk to me about something that's worrying them while I'm standing at the urinal."

Most people watching the demonstration



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are open to the idea of a new Tiburon jail system. But the DA's office is concerned that it won't provide adequate confidentiality and that Tiburon hasn't had a good track record in maintaining the current system, which frequently crashes. The DA's office wants to spend \$7 million on its own system, which would set Taylor back in his strategy to centralize IT for the county. The DA's office has its own IT staff—a small one—that does some basic applications support and desktop and network maintenance, but Taylor's shop would be accountable for the provisioning and management of the DA's system.

On a giant whiteboard, Tiburon representatives project three screen shots, side by side, which represent the three judicial departments. Taylor's demo is supposed to show how information entered into one database will immediately show up on all the others. But the projector freezes several times and data keyed into one page does not show up on the others.

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Taylor is not pleased, and he worries that the Tiburon execs have not stressed how they will partner with the county on the upgrade. After the meeting, Taylor talks to Major Skip Platt from the sheriff's office, who assures Taylor that he supports the upgrade. Superior Court Judge Doris Downs, once skeptical about the upgrade, pulls Taylor aside to say she's pleased with what she saw. "Maybe it wasn't as bad as I thought," Taylor says.

Another People Problem

As soon as Taylor is back behind his desk, Russell Mobley, assistant director for administration, comes in carrying a piece of paper. "We have an issue here," Mobley says. "Someone called [County Board] Commissioner [Bill] Edwards' office, complaining that he applied for the CTO job and never got a call for an interview. They want an explanation." Taylor takes the résumé from Mobley and scans it. "Come on," he says, pulling on his suit jacket and heading for the elevator and the commissioner's tenth floor office. His next meeting is going to have to wait.

Complaints like this are not unusual. Many of Taylor's staffing and hiring decisions, especially for some of the top paying positions, are questioned because the openings are publicly posted. And Taylor must answer to the commissioners.

In Edwards' office, Taylor explains to two

of the commissioner's assistants that he received 145 applications for the position and interviewed the top 12. The person complaining lacked sufficient management experience (he had supervised only four people in the past) and had no experience as a CTO. Therefore, he didn't make the first cut.

The assistants are satisfied, thank Taylor, and Taylor and Mobley head back down to the ninth floor.

Sometimes, Things Work Out

Taylor sends an e-mail to me. "The [Board of Commissioners] meeting on the budget is today. I just received the funding for upgrading the jail. Victory!!"

Taylor got the \$500,000 to upgrade the jail management system as well as \$200,000 for a new Unix-based server on which to run it. The sheriff's office threw its weight behind the proposal and helped argue that the upgrade would be cheaper than a new system and still meet everyone's needs.

"This really makes it worthwhile when you look back across the canyon to see how far you've come and how far down the canyon floor actually was," Taylor says. **CIO**

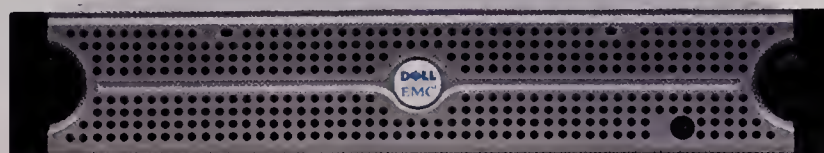
Washington Bureau Chief Allan Holmes writes frequently on public-sector IT. He can be reached at aholmes@cio.com.

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THE IDEAL and THE REALITY

What makes a good CIO today? What should a CIO be responsible for? What are the best traits for the job? *CIO* has been posing these fundamental questions for nearly two decades. The answers have changed over time, but they've never been more critical than they are today. The CIO position is undergoing a bifurcation, with a growing gap between the strategic leaders who leverage IT to drive the business, and the stewards of data and systems whose purpose largely is to cost-manage what is perceived as a commodity. Because all types of CIOs turn to this publication to learn from their peers, the editors must respect a variety of needs. But if you ask us what the CIO ought to be, we have one answer: a strategic business leader.

The ideal CIO position—the one that will bring the most benefit to the most companies—is defined by a finite set of responsibilities, accountabilities and essential skills. We've collected these job elements into a simple, digestible document, formatted as a CIO “job spec” from a hypothetical company that understands the value of IT. The spec was developed by drawing upon data from many studies of the role, and from extensive input from CIOs and executive recruiters. It was refined and finalized jointly with the CIO Executive Council, a professional association of CIOs founded by *CIO*.

It's one thing to know the ideal; it's another to see where you stand against it. Our self-assessment test lets you see how the role in your company stacks up against our ideal. (For the interactive version of the quiz and related articles, go to the online version of this story or www.cio.com/040105.) We hope that IT leaders, and the executives who hire them and shape company attitudes toward IT, will use both the specification and the test as guides for crafting, assessing and refining the CIO role.

—The Editors



CIO Job Spec



WANTED: The Best CIO

Position Specification
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The Company

A global company with a long history, the Best Practices Co. is committed to achieving and maintaining market leadership through a business strategy that emphasizes competitive differentiation and customer loyalty. The company recognizes that its employees are its most valuable assets and that knowledge and information are critical to its success.

The Position

The CIO drives the development and delivery of world-class systems and services, as well as a technology architecture that will enable our business strategy. The CIO is responsible for ensuring that our technology strategy converges and integrates with the strategy and goals of the corporation and its business units.

Reporting

The CIO is an integral member of the company's executive committee, and as such participates in all committee tasks and responsibilities. In addition, the CIO is expected to form a strategic IT governance committee (inclusive of key business leaders) to prioritize business initiatives that leverage technology. The governance committee reports to the board of directors on critical issues relating to competitive advantage, operational risk, security and regulatory compliance.

The CIO reports directly to the CEO but also works closely with the executive leading day-to-day operations (for example, the president or COO). The CIO has two main constituencies: other executive peers and P&L unit leaders.

Staff

As appropriate for our size and structure, IT employees are dispersed within business units but report directly to the CIO's IT organization. The CIO also oversees a core group of IT staff that provides cross-enterprise services. The CIO defines and executes an agile sourcing strategy, while maintaining a substantial core of IT managers and key employees internally.

Responsibilities

As head of the global IT organization, the CIO holds accountability and authority for all of the company's IT aspects. These fall into three categories:

1. Core IT concerns—including infrastructure, architecture and standards-setting, application development and maintenance, integration and data integrity.
2. Business applications—the CIO must apply an architectural knowledge of applications at the enterprise and business unit levels and must show expertise with the mission-critical applications, while delegating day-to-day responsibilities to direct reports as befits our complex, heterogeneous organization.
3. Enterprisewide concerns—including business processes and workflows, security and privacy, risk management (including business continuity and compliance) and quality improvement. The CIO sets policies in collaboration with other executives as appropriate and delivers necessary tools and systems.

The CIO's organization is responsible and accountable for selecting, approving and managing all major procured IT products and services, including anything that touches multiple business functions and processes or requires significant internal IT support. The CIO periodically reviews all major IT contracts entered into by the Best Practices Co.

The CIO must manage the IT department in an efficient, cost-effective and transparent manner, benchmarking costs against commercial service providers. The CIO should apply best practices to IT project management, such as prototyping, tracking and post-implementation auditing. In major IT capital initiatives, the CIO or a designee partners with a business unit sponsor to establish a business case, and to share ownership and accountability for the project and its outcomes.

The CIO oversees the IT department's formal leadership development program, working with HR to identify candidates for leadership tracks and succession planning, and to create a curriculum that emphasizes business and people skills.

The Candidate

To fulfill the many demands of the position, the CIO must have considerable years of diverse experience and a variety of skills related to managing technology, business and people.

Background/Experience

Successful candidates will have a technology background, with experience in both infrastructure and applications development, complemented by demonstrated business knowledge, such as experience leading a P&L unit. Business knowledge must be relevant to the operational environment of our vertical industry or market.

The candidate will have demonstrated financial and accounting acumen. The CIO will also have a proven ability to prioritize competing demands.

The candidate must have substantial management experience in these categories:

- Large, distributed IT environments
- Global resource and project management
- Staffing and sourcing alternatives, including remote, contract and outsourced
- Matrixed organizational structure
- Crisis response and recovery

Skills

The CIO must be able to envision and articulate IT's role in enabling and driving innovation, competitive differentiation, customer loyalty and efficiency for the company. Communication and interpersonal skills are essential—including the capacity to articulate the case for IT investments and alternatives in the language of business; the ability to shape and manage expectations of IT at all levels of the organization; and a facility in building effective relationships with corporate officers, function heads, business partners and suppliers.

Likewise, strong leadership and management skills are critically important—including the capacity for motivating IT employees; cultivated people skills (including the ability to sense and empathize with employee concerns); coaching, teaching and mentoring ability; a track record of hiring, developing and retaining critical talent and of building an effective management team.

Finally, the candidate's personality and values must make a good fit with the culture and core principles of the Best Practices Co.

Performance Measures

The CIO's job performance will be measured against achievements strategically important to the business, and performance objectives will be determined on that basis. IT operational excellence is a basic expectation.

CIO compensation will be tied to the demonstrated financial value of IT to the enterprise, as well as internal customer satisfaction goals. ■

HOW DOES YOUR ROLE

Check all answers that apply; some questions will have multiple checks. If no answer applies, skip that question. See the next page to determine your score, and turn to Page 88 for suggestions on how to improve.

1. To whom do you report?

- ☐ CEO (7 points)
- ☐ COO (5 pts.)
- ☐ Operationally oriented CFO (4 pts.)
- ☐ Financially oriented CFO (0 pts.)
- ☐ Corporate CIO (2 pts.)
- ☐ Other (0 pts.)

2. What is your functional title?

- ☐ Executive vice president (5 points)
- ☐ Senior vice president (4 pts.)
- ☐ Vice president (3 pts.)
- ☐ Director (0 pts.)
- ☐ CIO only—no functional title (3 pts.)
- ☐ Other (0 pts.)

3. Are you a member of the executive committee?

- ☐ I am a voting member. (10 points)
- ☐ I have no voting power, but I attend meetings. (7 pts.)
- ☐ I am not present at executive committee meetings. (0 pts.)

4. What is the board of directors' involvement with IT?

- ☐ There is a standing board committee on IT. (10 points)
- ☐ IT reports regularly to the board. (20 pts.)
- ☐ IT reports occasionally to the board. (10 pts.)
- ☐ IT has no involvement with the board. (0 pts.)

5. Who are your main constituents?

- ☐ I work closely with other CXOs. (4 points)
- ☐ I work closely with business leaders. (4 pts.)
- ☐ I focus on my IT staff. (0 pts.)

6. How is IT governance accomplished?

- ☐ A strategic governance committee, which includes key business leaders, determines IT investment priorities. (10 points)
- ☐ I chair a strategic governance committee that includes key business leaders. (15 pts.)
- ☐ There is no governance committee; I mandate governance arrangements. (2 pts.)
- ☐ There is no governance committee; I make governance decisions collaboratively with business leaders. (8 pts.)
- ☐ There is no governance committee; governance arrangements vary by business unit. (0 pts.)
- ☐ Governance arrangements are widely understood by business-side managers throughout the organization. (10 pts.)

7. What are your IT staff arrangements?

- ☐ I oversee all IT staff, including those dispersed among business units. (5 points)
- ☐ I oversee headquarters IT staff, while those dispersed among business units report to their unit leadership. (0 pts.)
- ☐ My in-house staff is larger than the number outsourced. (4 pts.)
- ☐ The great majority of IT functions, including some management, is outsourced. (0 pts.)

8. How are IT responsibilities handled?

- ☐ I oversee enterprise architecture policy. (5 points)
- ☐ I hold authority and accountability for IT architecture, infrastructure (including applica-

tions and standards), and integration at both the enterprise and business-unit levels. (7 pts.)

- ☐ I hold authority and accountability for IT architecture, infrastructure and integration at the enterprise level, while business units handle their own arrangements. (3 pts.)
- ☐ There is no oversight or guiding logic to my organization's IT architecture, infrastructure or integration. (0 pts.)
- ☐ I have an architectural knowledge of applications at the enterprise and business-unit levels. (3 pts.)
- ☐ I delegate day-to-day responsibility for IT architecture, infrastructure and integration to direct reports, such as a CTO. (2 pts.)

9. How are IT policies formed?

- ☐ I independently set policies for enterprisewide concerns, including business processes, security and compliance. (2 points)
- ☐ I set policies for enterprisewide concerns in collaboration with other executives and business leaders. (5 pts.)
- ☐ Business units set some or all policies on business processes, security and compliance, according to their needs. (0 pts.)
- ☐ I hold authority and accountability for major IT contracts and procurements. (3 pts.)
- ☐ Business units make some or all decisions on major IT contracts and procurements. (0 pts.)

10. What IT best practices do you use?

- ☐ My IT group consistently uses methods such as internal IT catalogs, benchmarking or charge-back systems to show transparency of IT costs. (4 points)

- ☐ My IT group consistently applies project management best practices, such as prototyping, tracking and post-implementation auditing. (3 pts.)
- ☐ I partner with a business-unit sponsor on major IT capital initiatives. (4 pts.)
- ☐ I lead major IT capital initiatives without a business-unit sponsor. (0 pts.)
- ☐ My IT group has a formal leadership development program. (3 pts.)

11. What is your job experience?

- ☐ I have a technology background. (5 points)
- ☐ I have experience in both IT infrastructure and applications development. (2 pts.)
- ☐ I have expertise with most or all of my organization's mission-critical applications. (2 pts.)
- ☐ I have business knowledge relevant to the operational environment of my company's vertical industry or market. (2 pts.)
- ☐ I have demonstrated financial and accounting acumen, either in business or in an educational program. (3 pts.)
- ☐ I have business management experience, such as leading a profit-and-loss unit. (3 pts.)
- ☐ My job experience draws from multiple job functions and industries and spans more than 20 years. (2 pts.)
- ☐ I have management experience in more than one country. (1 pt.)
- ☐ I have management experience with a distributed IT environment and a matrixed organizational structure. (2 pts.)
- ☐ I have management experience in multiple staffing and sourcing arrangements. (2 pts.)
- ☐ I have management experience in resource and project management. (1 pt.)

- ☐ I have management experience in crisis response and recovery. (2 pts.)

12. How strong are your soft skills?

- ☐ I have an "elevator speech" prepared on IT's role in enabling and driving innovation and competitive differentiation for the enterprise. (4 points)
- ☐ I am conversant in business and financial terminology, including that particular to my organization's industry. (3 pts.)
- ☐ I am an experienced negotiator. (4 pts.)
- ☐ I have recently tried to convince business executives or managers that they have unrealistically high or low expectations of what IT can do for them. (10 pts.)
- ☐ I have personal connections with people in *all* of the following roles: corporate officer, function head, business partner and supplier. (4 pts.)
- ☐ I am an experienced public speaker. (2 pts.)
- ☐ I have been an instructor for a course or have been a mentor in a formal program. (1 pt.)
- ☐ My coworkers would consider me emotionally intelligent. (3 pts.)

13. How good is the fit between you and your organization?

- ☐ I can summarize the core values and mission statement of my organization. (2 points)
- ☐ I agree with the core values and mission statement. (2 pts.)
- ☐ My organization has no core values or mission. (0 pts.)
- ☐ I feel "at home" with the culture of my organization. (5 pts.)

For self-help advice specific to each question, read "How to Make Your Reality More Ideal" on Page 88.

SCORING:

150-200—You are a rare CIO who is at or near the ideal for the position. Hold onto your status, and help your fellow IT executives make the climb.

100-149—You have some of the qualities of the ideal CIO but fall short in other areas. Use the guidelines and suggestions on Page 88 to shore up your specs.

Less than 100—You have far to go to reach the upper echelon. Are the shortcomings in your organization or in you? Use the guidelines and suggestions on Page 88 to find out.

—Edward Prewitt

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HOW TO Make Your Reality More Ideal

What do your answers mean?

1 To whom do you report? A direct reporting line to the CEO indicates that IT plays a significant role in the organization. But CIO-CEO reporting relationships are becoming less common, particularly among small and midsize companies, and more people are reporting to their CFOs, according to our "State of the CIO" surveys. Experts on organizational structure make a distinction, however, between reporting to operationally oriented CFOs and financially oriented CFOs. The former are akin to COOs and can be more in touch with a company's day-to-day functioning than a CEO. Thus reporting to the CEO isn't the only option for influential CIOs.

2 What is your functional title? Companies that take the CIO role seriously usually assign a functional title of vice president or higher. In "The State of the CIO 2004" survey, 39 percent of respondents were vice presidents, 6 percent were senior vice presidents, and 2 percent were executive vice presidents. Another 24 percent had CIO-only titles. But 29 percent were directors, a title indicating that the top IT exec is far down the totem pole.

3 Are you a member of the executive committee? Membership on the executive committee is regarded as the single most important indicator of a CIO's impact. Even the reporting relationship is secondary.

4 What is the board of directors' involvement with IT? Board involvement with IT is increasing, particularly in light of concerns about compliance with the Sarbanes-Oxley Act. A board member who champions IT concerns can be an invaluable asset for a CIO. A few companies—FedEx for one—even have standing committees for IT oversight.

5 Who are your main constituents? Who a CIO works with is at least as important as the reporting relationship. CIOs should have strong working relationships with other CXOs and business leaders. Working with the IT staff is a given, but that alone is not sufficient for today's CIOs.

6 How is IT governance accomplished? IT governance is the mechanism for CIO effectiveness. Many different governance processes can be effective, but senior management participation is key. A CIO unilaterally determining governance processes is shouting into the void. Another key to good governance is that the processes are widely understood.

7 What are your IT staff arrangements? Outsourcing is a given in most IT environments. The key question for CIOs is whether they control the outsourcing or are controlled by it. The ratio of in-house staff to the number outsourced is a simple means of calculating control. The CIO needs a substantial core of direct reports to maintain authority and ensure a responsive and flexible

IT function. A separate issue is who oversees IT staff in business units. The presence of IT staffers who report solely to business unit managers tends to lead to siloed systems and fragmented IT governance.

8 How are IT responsibilities handled? Many organizations distribute authority for aspects of architecture, infrastructure and integration on the grounds that different business units have very different needs. But CIOs who have both oversight and personal knowledge of the architecture and applications appropriate for the enterprise and business units can achieve the proper mix of customization and centralization.

9 How are IT policies formed? The CIO should have significant input on enterprisewide concerns in which IT plays a big role, such as regulatory compliance. But policy-making should be done in conjunction with other stakeholders rather than unilaterally. When it comes to major IT contracts and procurements, CIO control is critical.

10 What IT best practices do you use? Best practices for IT are no secret, but their implementation is often dependent on other functions within an organization. Implementing and maintaining a leadership development program, for example, takes a great deal of collaboration with the HR office.

11 What is your job experience? In the debate over the best background for CIOs—technology or business—both sides win. Technology training and experience is a must-have. CIOs who have to delegate technical competence are at a disadvantage with vendors, consultants, tech-savvy executives and their IT staff. But business skills also are essential; an IT executive with outstanding technology skills but no business acumen won't be an executive for long. Management experience, particularly in areas that are highly relevant to IT—such as crisis response and project management—sets top CIOs apart from the rest. Because of the multinational nature of the IT workforce, CIO work experience in more than one country is increasingly desirable.

12 How strong are your soft skills? Soft skills such as leadership, negotiation ability and emotional intelligence are the hardest to pin down but among the most important for CIOs today. IT execs need to change their reputation as introverted geeks if they want to succeed.

13 How good is the fit between you and your organization? An executive's fit with the values and culture of his organization should not be underestimated. One executive recruiter says that a CIO with three-quarters of the skills for a job opening can succeed if his values match the organization's, but a perfect skill set can't overcome a poor cultural fit.

—The Editors

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Journey *to the IT Promised Land*

How one CIO's budgeting blues led to an organizational revamp at Assemblies of God

Reader ROI

- :: The linkages among budgeting, organizational structure, workflows and corporate culture
- :: Transforming a cost-plus budgeting system to a value-based one
- :: The systems thinking approach to analyzing organizational performance

Tim Strathdee, a kind and gentle soul by any account, ruthlessly pitches 99 percent of all junk mail that hits his inbox. But in August of 2002, the CIO of the Assemblies of God (AG) U.S. headquarters in Springfield, Mo., was gearing up to prepare his budget for the coming fiscal year, an annual exercise in frustration. So when he saw a mailing about a variation of activity-based costing, he opened it. Read it. And then called the author, Dean Meyer.

Strathdee was dreading budget season because the AG process followed a typical cost-plus model, in which a department's annual budget is based on the previous year's amount, plus a percentage for inflation or other factors. Once approved, a cost-plus budget, which remains the predominant method of budgeting in corporate America today, functions as a checkbook to which no funds can be added.

b y A L I C E D R A G O O N



Before changing the company's culture, Assemblies of God CIO **TIM STRATHDEE** was evaluated primarily on whether he stayed within budget, not on the value he delivered.

Strathdee was evaluated primarily on whether he stayed within budget, not on how much value he provided to his customers. So when departments wanted IT's help to launch new initiatives, he could do no more than add their requests to his growing queue and hope that he could pilfer money from somewhere else in his ever-so-fixed budget.

But what began as a conversation with Meyer about building a more value-driven budget for the IT department would ultimately turn into a multiyear project to transform the budgeting process of the entire AG headquarters' operation—and its organizational structure, workflows and even its culture. Along the way, Strathdee's role would morph from catalyst to design team committee member to behind-the-scenes thought leader.

While the goal of supporting missionary work is unusual in some ways (for exam-

"People did not talk to each other. I don't mean they didn't trust each other. They were so passionate about what they were doing, they just went along and did it."

—**HAROLD SALLEE**, ASSISTANT TO THE GENERAL SUPERINTENDENT,
ASSEMBLIES OF GOD HEADQUARTERS

ple, few corporations begin and end each meeting with a prayer), many of the organizational issues that AG leaders wrestle with are no different from those facing the most profit-driven companies publicly traded on Wall Street. Companies fret about losing customers; AG leaders were scratching their heads over a slowdown in church growth in the late '90s. AG's Gospel Publishing House, which produces more than 16 tons of literature a day, was facing declin-

ing revenue. Field reps met with increased competition as they marketed everything from Sunday school curricula to magazines for the Royal Rangers and Missionettes (AG's version of Boy Scouts and Girl Scouts) to more than 12,000 independent-minded, self-governing AG churches across the country. General Superintendent Thomas Trask, AG's CEO-equivalent, worried that the relevance of AG's products and services was diminishing. And since publishing

CIO SPOTLIGHT

INFORMATION SECURITY

Emerging and Evolving Threats

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Securing the
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I'm Secure, You're Secure

BY TOM FIELD

No question about it: Dealing with viruses, spam, spyware, network intrusions and other security threats remains a top priority for every IT organization. But these days, business value is an equally critical consideration.

Or at least that's what my friends in the information security industry tell me. After years of scaring business and technology leaders into protecting their enterprises from vandals, denial-of-service attacks and infected e-mail, security experts are now adding another element to the mix. Instead of just playing on our fears, they're trying to build up our confidence as well. Their basic message is, "Look at all you've done to protect your enterprise. Now look at what else you can do to take control and batten down the virtual hatches—without wasting a bundle."



I call it the "I'm Secure, You're Secure"

approach to promoting information security.

The point is, we've all come to realize that security is more than a necessary expense. It's a business investment like any other, one that must be made carefully and measured for the value it delivers.

And, boy, there are plenty of investment opportunities out there! CXO Media's sister company, IDC, reports that IT security spending is set to grow by 16 percent this year, with some product areas receiving double the investment they saw last year.

So let us help you spend your money wisely.

Welcome to the first 2005 edition of *CIO Spotlight*, in which we focus squarely on information security. In addition to helping you identify threats and opportunities, this special edition aims to hammer home the importance of having:

- Good IT governance
- Solid security goals and policies
- A well-orchestrated plan for regulatory compliance
- The right tools for making it all happen.

As you read the expert advice and case studies in this issue, consider how you can apply the insights and lessons learned in your own organization. And, please, don't hesitate to let us know about strategies that have worked for you. Send me your thoughts and we'll share them in the next edition of *CIO Spotlight*.

Tom Field is director of content development for CXO Media's Custom Publishing Group. Please send your thoughts on *CIO Spotlight* to Tom at tfield@cxo.com.



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TAKING CONTROL:

Best Practices for Fighting Back

SECURITY THREATS become increasingly diverse, sophisticated, coordinated and virulent almost by the day. For example, after just 24 hours in the wild last autumn, a variant of the Bagle virus, spread by spam, became one the most prolific viruses ever, rapidly replicating itself and bogging down corporate e-mail servers. Meanwhile, tools available on the Web make it easier than ever for even amateur hackers to launch attacks.

That explains why more than half of the chief security officers queried at the second annual CSO Interchange conference in December 2004 listed as their top security concerns worms, viruses, Trojan horses and regulatory compliance. In the same survey, 62 percent said they don't receive early enough warning about Internet-related threats, while fully 80 percent acknowledged that such attacks have hurt their companies' bottom lines.

No question about it: Keeping up with constant security threats is a significant challenge. But as more organizations become aware of their vulnerabilities and shortfalls—too often learning the hard way—they're fighting back. No wonder security-related spending has grown steadily over the past

several years while investment in other technology areas stayed flat or declined. In fact, 86 percent of businesses plan to increase their security investments this year, according to research from Framingham, Mass.-based IDC.

"Companies buy insurance, employ security guards and decide how much to invest in screening employees based on experts' calculations of expected risk, the cost of a loss and the cost of insurance to protect against that loss," says Rebecca Wettemann, an analyst at Nucleus Research Inc., a Wellesley, Mass.-based market research firm. She recommends that organizations apply the same kind of risk-benefit evaluation to their IT infrastructures. "IT managers can add

Meeting Compliance Challenges

HOW ARE ENTERPRISES dealing with Sarbanes-Oxley and other new laws and regulations that have an impact on their IT security? Among the common approaches:

Standardizing IT security governance efforts. After passage of the Sarbanes-Oxley Act, Allstate Corp. turned to the IT Governance Institute's Control Objectives for Information and Related Technology (COBIT), which help ensure alignment between business strategies and technology investments. Allstate, the Northbrook, Ill.-based insurance giant, uses COBIT to evaluate IT governance, obtain benchmarks for assessing automated controls embedded in key business processes and assess application-support team control activities.

The big-picture payoff: Allstate has achieved consistent controls to improve the efficiency and effectiveness of its business.

Using certified auditors. "As IS auditors travel throughout an organization, they are able to see and verify which parts of the information security policy are being complied with, and can offer suggestions on improving compliance or making suitable updates to the policy," says Marios Damianides, CISM, CISA, CPA, a New York-based partner in the Technology and Risk Services Group at Ernst & Young. "The IS auditor also comes across systems or situations that are not adequately

addressed in the policy and offers guidance on those. An active IS audit function can make the difference between an effective, living IT security policy and a dormant one."

Damianides is also international president of the Information Systems Audit and Control Association (ISACA) and the IT Governance Institute (ITGI), both based in Rolling Meadows, Ill. More than 1,300 ISACA Certified Information Systems Auditors (CISAs) are currently employed as CEOs, CFOs, CIOs or IS security directors. About 11,000 more serve as audit directors, managers or consultants in IT operations, security or auditing positions.

Centralizing access control. Affymetrix Inc., a Santa Clara, Calif.-based biotech firm, takes compliance seriously. Protecting the company's valuable intellectual property is a strategic necessity. Thanks to a solution from Encentuate, of Foster City, Calif., Affymetrix got out-of-the-box compliance for 13 of 15 applications directly affected by Sarbanes-Oxley. In addition, simplifying sign-on and password management for 1,000 employees generated savings of more than \$200,000 in just six months.

"Compliance requirements are forcing companies to strengthen their security, often at the expense of user convenience," says Encentuate founder and CEO Peng Ong. "The best solutions will allow IT to strengthen security and at the same time provide users with increased convenience. We call this enterprise access security—a single solution that will allow an enterprise to simplify, strengthen and track access across information systems."

value by clearly understanding the relative costs and benefits of different technology strategies and by working with the risk experts to map the best strategy for the organization," she says.

Got mandate?

What you do about protecting your company against such threats depends on the nature of your business as well as its culture and leadership. Are your company's executives oblivious to the risks? In that case, you'll need to start by educating them. On the other hand, if they are aware of recent threats, they're likely already demanding action.

Either way, once you have a mandate to improve IT security, it's wise to begin with these components:

- A thorough assessment of the threats your enterprise faces, including all vulnerabilities and risks
- Solid security strategy goals, with tactics detailed in a company security policy
- An implementation approach that fits your organization's processes, culture and infrastructure
- The right tools and solutions, chosen for their concord with your needs, goals and methodology
- Dedication to proper ongoing management and maintenance.

"Targeted attacks, as well as worms and viruses like SQL Slammer and Nimda, are proof positive of the need to have a comprehensive corporate security policy that is approved and adopted by the senior management team," says Betty Johnson, vice president of IT at the Santa Cruz, Calif.-based Nonprofits

VENDOR INNOVATION SNAPSHOT: **SAFENET**

Encryption Technology: Core Strength Behind Products and Solutions

SOLUTION PROVIDER: SafeNet Inc. is a global leader in information security. Founded more than 20 years ago, SafeNet offers complete security solutions—a full spectrum of best-of-class security products encompassing hardware, software, chips and intellectual property, keeping current product rankings and ratings.

SafeNet's core strength is the encryption technology behind its products and solutions. The company has been awarded 43 distinct patents, with 31 additional pending and provisional patents—many of which are also patented in various countries around the globe. As further evidence of its known leadership in the field, SafeNet has attracted more than 300 encryption engineers, building one of the largest teams of its kind in the world.

PRODUCT AND SERVICE OFFERINGS: SafeNet technology is the *de facto* standard in remote-access client software and the market leader in USB authentication tokens that eliminate user names and passwords; SSL acceleration devices providing fast and secure online transactions; licensing products preventing software piracy; high-assurance security products; and SecureIP Technology licensed to Internet infrastructure manufacturers, service providers and security vendors.

ROI: "Our partnership enables us to offer a complete solution to our customers that is OMA DRM v2 com-

pliant while meeting the demands for increased security and flexibility," says Cees Geel, marketing and sales director for SafeNet partner Philips Software. "Through this cooperation with SafeNet, a respected world leader in the field of mobile security, we have an ideal partner to complement our own extensive in-house DRM expertise and help strengthen our solutions yet further," Geel says.

"SafeNet's technology is silicon-proven. They are a profitable, financially sound company with an international presence," says Sunil Baliga, vice president of marketing and business development at K-Micro (Kawasaki Microelectronics), a leader in advanced yet affordable ASICs. "Thus, partnering with a trusted vendor such as SafeNet will help K-Micro

quickly grow in markets that need security technology, including fiber-to-the-premises (FTTP) and network printers."

CUSTOMERS: Samsung, Texas Instruments, Nokia, Ericsson, NEC, ARM, Bank of America, NetGear, the U.S. Departments of Defense and Homeland Security, Adobe, the U.S. Internal Revenue Service and scores of other government, financial institutions, midsize firms and OEM customers.

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Insurance Alliance Group of Companies, which provides liability insurance for charitable nonprofit organizations.

The starting line

"CIOs and IT managers need to take part in risk identification and, at a high level, understand controls and vulnerabilities," says Phebe Waterfield, CISSP, a senior analyst at The Yankee Group, a Boston-based research and consulting firm.

More important, in her view, is understanding business risks, what controls are in place to mitigate those risks and

where those controls are weak or vulnerable. "The implications of this for security policy, information sharing and IT governance are, simply, visibility," she notes. "Regulations require more visibility and greater definition around IT process and procedure. Loose processes and vague policies are no longer acceptable because they do not ensure that IT systems are operated securely."

Chances are your campaign to reduce your organization's vulnerability and risk will be anchored by one of these kinds of security projects:

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One comprehensive, modular security platform — Borderless Security from SafeNet.

The Borderless Security Platform from SafeNet effectively combines authentication, authorization, and confidentiality into one strong security solution that eliminates boundaries. The Platform removes the constraints placed on business by traditional perimeter-based solutions and security point products. These uniquely packaged components merge multi-factor authentication, enterprise single sign-on, easily managed authorization, and certified credential-based confidentiality into one tightly integrated solution. Working seamlessly together, the Platform components extend your existing network and identity management security infrastructure.

For our new Borderless Security white paper, go to www.safenet-inc.com/borderless.

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APPLICATIONS AUTHENTICATION REPORTS & ANALYTICS AUTHORIZATION & POLICY MANAGEMENT IDENTITY & ACCESS MANAGEMENT

Managing multiple user accounts, passwords and authorizations can quickly go from overwhelming to all but impossible.

...Securing your network

Doing business online—even just a small amount—means changing the way you handle network security. This transformation can range from reconfiguration to a redesign of the architecture itself.

Aligning what you have. As enterprises open up their IT environments to the Internet, network-perimeter security techniques must adapt to two often-conflicting demands:

- The need to protect against the ballooning volume and variety of threats as well as a tightening margin between discovery and malicious exploitation of vulnerabilities.
- The need to provide easy connectivity and data access for mobile and home-based workers and outsiders, such as partners and suppliers. Obviously, such arrangements provide welcome collaboration capabilities, but they can also cause vulnerabilities that could compromise sensitive information and network security.

As a result, you may find yourself re-segmenting your network to make parts of it more secure—but at least that provides the opportunity to build closer alignments among IT, security and business needs.

Meeting demands for connectivity. Longer term, you may need to consider new network architectures that can isolate low-security subnets (such as one with employee information that's neither mission-critical nor confidential), as well as security policies that reflect individual business units' network security considerations based on their risk, availability and access requirements. By combining such technologies as virtual private networks (VPNs) and Secure Sockets Layer (SSL) with identity management solutions, you can enable secure, enterprise-to-enterprise partnering and collaboration.

...Standardizing/integrating IT infrastructure

In many corporate IT environments, the approach used to create and implement applications and systems could be summed up as seat-of-the-pants at best. Security risks, holes and vulnerabilities abound.

In the long term, you can resolve that situation by developing standards regarding software development and acquisition. That job is more easily accomplished in enterprises that are already oriented to process rationalization using methodologies such as Six Sigma and TQM, which can inject security standards and tests into existing process controls and templates.

...Complying with new laws

To meet regulatory requirements such as the Sarbanes-Oxley Act, the Gramm-Leach-Bliley Act, the Patriot Act and the Health Insurance Portability and Accountability Act (HIPAA), your organization may need to create a set of security controls and a dedicated team to oversee them. That group should, in fact, be separate from IT, which should cede the reins over vulnerability assessment, intrusion detection and similar tasks.

Indeed, if your enterprise is affected by such regulations—and virtually all organizations are—you can expect formal IT security governance reviews to be in your future. That's because some regulations require that certain parts of an organization's information systems are sufficiently secured and the actions of authorized staff (read: systems administrators) monitored. IT staff watching IT staff doesn't meet the laws' requirements; often a separate security-control operation is needed to meet the audit requirements.

...Managing identities

How you approach the authentication, authorization and access control challenges inherent in enterprise-wide identity management will likely depend on what kinds of problems you need to solve.

If you're seeking help for the infrastructure you have now, implementing password management or account provisioning solutions can ease the burden of supporting your current application portfolio and provide a reduction in help-desk costs.

If you're doing business online, or preparing to do so, you already know that managing multiple user accounts, passwords and authorizations can quickly go from overwhelming to all but impossible. Rationalizing these efforts with an enterprise-wide identity infrastructure via a lightweight directory access protocol (LDAP) directory and a Web single sign-on (SSO) engine offers a foundation for:

- The kinds of federated identity capabilities on which inter-enterprise partnering, such as supply chain relationships, depends
- The centralized authorization services necessary to use Web services architectures, which can help reduce software development and maintenance costs. **CIO SL**



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A fountain pen and a computer mouse are positioned diagonally across the background. The pen is on the left, pointing towards the top left, and the mouse is on the right, pointing towards the bottom right. They are set against a dark, textured background that resembles a wooden surface with a vertical grain. The text is overlaid on this background.

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Add The Benefits Of The Negative Security Model

The negative model specifies threats and vulnerabilities, then matches patterns for known risks. Securify combines the positive model and the negative model so you get comprehensive and precise detection, automating the elimination of false positives. Risk-based prioritization, complete extranet management, and more.

Extranet Control:

This global bank relied on IDS and managed services to analyze false positives, spending millions of dollars in threat detection, yet not able to manage out violating partners. Securify virtually eliminated false positives, and identified numerous misconfigurations, bringing new control to partner management while saving millions of dollars.

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Automate the priority of known vulnerabilities. Automate firewall configuration verification. Automate network compliance audits. Automate risk-based prioritization. With Securify, you automate the analysis and get precision in action. You are able to apply more resources to remediation and change management, which begins the course of continuous improvement and the hardening of the internal network.

Firewall Configuration Verification:

This global credit card company found that they were getting behind in firewall configuration verification. Regulatory compliance requirements were urgent, so they turned to Securify to reduce the amount of time to verify firewall configurations by 60%, saving both time and labor cost, and improving security.

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IMPROVE SECURITY: Partner Extranets, Comprehensive Threat Detection Without False Positives



IDENTITY AND ACCESS MANAGEMENT:

Knowing Who's Who

HOW DO YOU GAUGE trustworthiness? With a handshake? Intuition? A look at the other guy's driver's license?

To protect against a growing number of threats, IT infrastructures must include built-in ways to establish the credibility of employees, customers, partners and suppliers. How that's accomplished—via tasks involving provisioning, authentication, authorization, access control and auditing—is what identity management is all about.

"We must ensure that patient health information is protected and provide audits for patients who wish to see who had access to their health care records," says John Hummel, CIO and senior vice president of IS at Sutter Health Network, based in Sacramento, Calif. That means knowing exactly who users are as they log into the organization's systems.

The solution: software and procedures that can assure the identities and manage the access rights of all users, devices, applications and organizations that are attempting to interact with a company's IT resources. The Stamford, Conn.-based research and consulting firm Gartner Inc. reports that costs of identity-management solutions vary from \$5 to more than \$25 per user, but reductions in help-desk costs alone can make the technology a good investment.

Automating provisioning—that is, handling user access capabilities automatically, rather than manually—can generate significant savings as well. According to Gartner, automatic provisioning for a dozen applications in a 10,000-employee enterprise can cut costs by \$3.5 million over three years and produce a return on investment of nearly 300 percent. Such impressive returns come chiefly from a decreased need to manage user access (an annual reduction of 14,000 hours) and a 6,600-hour-per-year drop in help-desk hours. And automatic user provisioning and de-provisioning make the process of initiating, changing and ending individual access rights faster and less prone to error.

Beginning with a directory

Most identity management systems are founded on a directory or directory service that hierarchically lists and categorizes users, devices, applications and organizations, storing such identity attributes as authentication details and access rights.

Traditionally, several distinct programs have handled these functions: One does user provisioning, another deals with passwords, a third stores authentication information. Each program, along with individual user access-control lists, must be separately maintained, synchronized and kept up to date.

These days, companies are looking for solutions that will eventually provide federated, enterprise-wide, single sign-on solutions. The objective: systems that are interconnected so that workers logged into their corporate intranets can seamlessly access partners' systems with authentication, authorization and access credentials automatically recognized and accepted across enterprises.

The goal, according to Rebecca Wettemann, an analyst at Wellesley, Mass.-based Nucleus Research, a market research firm, is "to manage integrity and security without locking down communications in a way that negatively impacts the business."

Rather than developing a single blanket policy, companies should identify key areas where documents and communications are most sensitive and look for appropriate technology to manage them. "Digital identity management coupled with digital content management and document-management solutions are good starting points," Wettemann says, "particularly if they support different access and audit levels for different users, groups of users, and types and pieces of content."

The importance of federation

Identity management solutions will increasingly be based on Web services and federated standards designed to enhance the exchange of identity information between organizations with an EDI- or a PKI-like exchange of trusted identity characteristics. So perhaps someday in the not-too-distant future, you'll be able to count the number of passwords you use in your job on one hand.

Key to that effort is the establishment of a single identity management standard, such as the XML-based Security Assertion Markup Language, that everyone can embrace.

CUSTOMER SUCCESS SNAPSHOT **ENCENTUATE**

Community Medical Center Improves Patient Information Security

CASE STUDY

CUSTOMER: Community Medical Center is the largest regional health-care provider in central California, with 16 facilities, more than 850 beds and 6,100 clinical and non-clinical employees. Community has 200 applications (legacy, desktop and Web), more than 5,000 users and 2,600 desktops—of which more than half are shared by multiple users.

OBJECTIVES:

- Achieve regulatory compliance—access control, audit logs, stronger security
- Provide secured access in a shared workstation environment
- Offer simplified and faster access to all applications in a highly complex and heterogeneous environment
- Revoke access for departing employees and contractors
- Use one ID badge to access both building and information systems

SOLUTION: Encentuate offers an Enterprise Access Security solution that simplifies, strengthens and tracks access to information systems. The Encentuate solution is unique in that it automates sign-on/off, manages strong authentication and provides audit reports by user. Deployment is fast and cost effective because Encentuate requires no change to existing applications, uses existing ID badges and is adopted rapidly by users.



ENCENTUATE®
Security Through Convenience

RESULTS/BENEFITS:

- Immediate regulatory compliance
- Faster access to electronic information
- Satisfied and more productive staff
- Dramatic reduction in help-desk calls
- No need for extensive systems integration
- Ability to transparently increase security without user involvement
- Unified access across physical and information systems
- Minimal investment because the solution leverages existing infrastructure

FROM THE CUSTOMER:

"The Encentuate TCI product simply works. It is easy to implement and provides a new level of convenience for both IT and for our users.

Encentuate simplifies the process of IT administration, streamlining our security management and providing consistency between platforms. Encentuate provides

our users with one secure password to our applications and flexibility to manage how users access applications, something other vendors have not easily been able to provide."

—**GEORGE VASQUEZ**, Director of Technology Services, Community Medical Center, Fresno, Calif.

CONTACT INFORMATION: info@encentuate.com
www.encentuate.com
650-312-8300

Currently, several standards are battling for domination.

The competition isn't deterring identity management solutions providers, however. Encentuate's TCI solution, for instance, includes sign-on automation, integrated access across information, network and physical access systems, support for physical access cards as second-factor authentication and a roadmap that leads incrementally from passwords to a strong digital identity.

"As the future unfolds, network access devices will have to be built with strong protective shields, such as firewalls," notes Peng Ong, founder and CEO of Foster City, Calif.-

based Encentuate. "All network access devices will have to become self-secured nodes." The implication: Access control will move from location to identity, from where to whom.

"Until now, companies have had to make impossible choices," Ong continues. "They could opt for a client-based point solution that makes life easy for users but does not provide layered security upgrade possibilities. Or, they could choose to integrate multiple server-based solutions, which is an expensive proposition. What's needed is a solution that combines convenience for users with central administration, all in a fast-to-deploy package." **CIO SL**



SPYWARE AND SPAM:

Worse Than Ever

ONCE CONSIDERED mainly a problem for unprotected home computers, spyware now threatens enterprise security, turning corporate computers into spam-generating machines and wreaking other havoc. Two-thirds of consumer PCs are infected with some sort of spyware, according to estimates from the Framingham, Mass.-based research and consulting firm IDC, whose analysts describe infiltrating corporate firewalls with malicious spyware as an easy process.

Spam, meanwhile, costs U.S. businesses \$4 billion annually in lost productivity, according to estimates from The Yankee Group, a Boston-based research and consulting firm. A recent CSO magazine Sensor Survey identified spyware as the No. 2 security-related concern (behind “blended threats” combining the characteristics of viruses, worms, Trojan horses and malicious code with server and Internet vulnerabilities). Spam, or unsolicited bulk e-mail, was No. 3 because it clogs networks and serves as a vehicle for other security threats, such as viruses, worms and Trojan horses—all listed individually among the CSOs’ top 10 concerns.

“My greatest concern is really spam—the cost and effort of keeping up with spam is tremendous—as well as viruses and worms,” says John Hummel, CIO and senior vice president of IS at the Sacramento, Calif.-based Sutter Health Network.

Why you should care about spyware

Spyware is software that, without authorization, selects private information on a computer and sends it to a third party.

The problem began with adware, which often appears benevolent because it offers users “free” screensavers, download accelerators or other applications. Home users typically install those programs without realizing that they’re likely subjecting themselves to pop-up ads, erratic browser behavior and other side effects.

Now employers face related problems: the loss of network bandwidth due to unsolicited advertising traffic, overloaded help-desk staff who must clean up adware-laden desktop and notebook computers, and liability risks because users can be unwillingly exposed to unsavory Web sites.

In addition, spyware can carry:

- **Keystroke logger/screen capture software** that surreptitiously installs and hides itself and then records keystrokes and screenshots that can be used to reconstruct a user session, enabling the theft of passwords and other confidential information. Such information can be used to break into networks and databases.
- **Hacking programs** such as password crackers and Trojan horses that, once successfully deployed on unsuspecting

CUSTOMER SUCCESS SNAPSHOT: SURFCONTROL

Richard Petty Driving Experience Blocks Multiple Internet Threats

**CASE
STUDY**

CUSTOMER: The Richard Petty Driving Experience gives racing fans the ultimate thrill of racing in a mega-horsepower stock car around a competition-style speedway. Founded in 1994 by NASCAR legend Richard Petty, the Concord, N.C.-based company currently operates 20-plus tracks nationwide, offering enthusiasts a chance to experience everything from a 165-mph ride with a professional driver to the adrenal rush of taking 40 laps behind the wheel.

OBJECTIVES:

- Block spyware from infiltrating the network
- Prevent spam from degrading e-mail server performance
- Stop employee Internet abuse

SOLUTION:

SurfControl E-mail and Web Filters provide robust multilayer protection against escalating threats from spyware, phishing attacks, spam, pornography and viruses. SurfControl E-mail Filter manages employee e-mail usage and significantly reduces security threats, legal liability, network abuse and loss of productivity. Through risk recognition, flexible rules, reporting and administration, SurfControl Web Filter manages employee Internet access and stops malicious software, inappropriate content, recreational surfing and other threats.

**RESULTS/BENEFITS:**

- Decreased spyware incidence by 45 percent
- Reduced individual mailbox spam by 95 percent
- Filtered 35,000 spam messages in the first week alone
- Enabled end-user management of spam to prevent loss of legitimate e-mail
- Implemented blacklisting to block known spam servers
- Reduced time spent on e-mail administration
- Tracked Internet usage by employee to investigate suspected abuse

FROM THE CUSTOMER:

"Because we are a well-known organization, we get hit with a lot of spam. The day I installed

SurfControl E-mail Filter, 4,000 messages were filtered out immediately. My users really like the end-user spam management feature. They get to look at their own mail and help manage the system, which reduces the time I spend managing the product. And before SurfControl Web Filter, we had no way to track Internet abuse or usage. SurfControl's reporting is a big benefit because it lets me track these activities. We've also seen a decrease in spyware."

—KEVIN CRAIG, IT Director, Richard Petty Driving Experience, Concord, N.C.

CONTACT INFORMATION: info@surfcontrol.com
www.surfcontrol.com
831-440-2500

users' computers, can be used remotely at any time to break into other systems.

- *Dialer programs* that can be used to change local dial-up Internet service provider telephone numbers to costly long-distance numbers.

Best practices for dealing with spyware

Here are some techniques for protecting your company, computers and employees from spyware and adware:

- *Teach your users about the risks* associated with downloading adware, shareware, freeware and other programs from the Internet. Where possible, forbid them from doing so.

- *Train high-risk workers to recognize signs of threats.* You'll want your help-desk staff, for instance, to be able to recognize both human and automated attempts to elicit passwords.
- *Develop protections for gateways.* URL filtering can be used to block known adware sites; download filtering can neutralize adware programs and reduce their bandwidth consumption.
- *Boost protections for clients.* Keep in mind that people accessing your network remotely won't be affected by gateway controls. Institute protective measures such as keeping client browser software patched and locking down desktop computers so that new applications can't

be downloaded unless they're on an approved list.

- **Implement two-factor authentication**—that is, two ways of determining identity, such as a password and a fingerprint—especially if you're concerned about password theft.
- **Clean up desktop systems** using anti-spyware tools such as those from Tokyo-based Trend Micro and Islandia, N.Y.-based Computer Associates.

Best practices for deflecting spam

Make no mistake: Spam represents a genuine security threat. Unsolicited junk e-mail blocks the availability of resources and, when it carries a virus, becomes an immediate danger to the health of the enterprise. Following are some ways to reduce the flood of spam:

- **Don't list e-mail addresses on your Web site.** Use a fill-in-the-blanks e-mail form or a graphic image of an e-mail address with no HTML code.
- **Server-side encode your e-mail addresses.** You can avoid displaying e-mail addresses in HTML code by encasing them in a server-side encoder that generates addresses on the fly.
- **Disguise e-mail addresses.** The idea is to fool the automated Web spiders, but not the humans who are looking for addresses. Thus, `jdoe@xyz.com` is disguised as `jdoeDELETE@xyzTHIS.com`.
- **Use less obvious e-mail addresses.** Rather than `jdoe@xyz.com` or some similarly rational address scheme using variations on employee names, consider making addresses less intuitive to thwart brute-force dictionary spamming.
- **Use e-mail aliases.** Create "front" addresses so that the real e-mail address is shielded by another address—or even several addresses—on which you place filters that admit desired e-mails and quarantine or delete the rest.
- **Authenticate incoming e-mail.** One prevailing technique is a "challenge-response" system based on the philosophy that "good" e-mail comes from legitimate senders that are on your approved list. With such solutions, when e-mail comes from unapproved sources, your server automatically replies with a message instructing senders to confirm their identities. Once they've done so, they're added to your list and their e-mails are accepted.
- **Don't become part of the problem.** This means hardening your hosts and servers to eliminate vulnerabilities, finding and getting rid of spyware, closing open relays and, of course, carefully controlling access.

In addition, products such as the Web and e-mail-filtering solutions from SurfControl plc, which is based in Cheshire, England, can block sites that host spyware, software download, instant messaging and other potential threats. **CIO SL**

NETWORKS AND INFRASTRUCTURE Help for IT

THE NUMBERS TELL IT ALL. Fully 78 percent of those participating in the 2004 Computer Security Institute/FBI Computer Crime and Security Survey detected virus attacks in their corporate networks, while nearly 40 percent reported intrusions. More than half had found that their systems had been used in unauthorized ways; more than a third had discovered that users had been able to access information they weren't authorized to see.

"The reason why firewalls exist is because of an oversight in the design of the first generation of networked computers," says Peng Ong, founder and CEO of Foster City, Calif.-based Encentuate Inc. "We just did not expect that computers would be connected to so many other computers, and we did not design them with sufficient security. As network access devices—such as PCs, laptops, PDAs and phones—get more mobile, the traditional way of securing them by putting them in a 'secure' environment has become unworkable."

While it seems like absolute security for IT networks and infrastructures remains a futuristic idea, welcome new solutions are emerging to address enterprise-wide security needs.

Integrating threat management

Wherever you begin in your quest to improve enterprise information security, you'll eventually find yourself considering narrowly focused point solutions, especially if they offer leading-edge capabilities. And so you'll have to consider the pros and cons in this version of the age-old debate between the virtues of point versus integrated solutions.

Certainly the arguments for integrating threat management are appealing:

- Too often information security and physical security are separate, uncoordinated endeavors. Physical security issues—such as building designs offering clear sightlines, no hidden stairways, and so on—tend to get short shrift.
- Point solutions handle a limited set of tasks that too often trigger false alarms, may not reveal larger patterns and are difficult and costly to centrally manage. Intrusion-detection systems (IDSs), for instance, use either signature files or heuristics to predict attacks, but are too often wrong. Vulnerability-assessment scanning systems spot network

VENDOR INNOVATION SNAPSHOT: **ISACA**Supporting Sound
IT Practices**CASE
STUDY**

SOLUTION PROVIDER: The Information Systems Audit and Control Association® (ISACA®) is a global leader in IT governance, control, security and assurance. ISACA is dedicated to supporting individuals in achieving high levels of organizational performance and conformance through the application of sound information security, IT assurance and IT management practices.

PRODUCT AND SERVICE OFFERINGS:

The association strives to provide the elements needed by any growing professional discipline: original research, practical education, career-enhancing certification, industry-leading standards and best practices, a network of like-minded colleagues, professional resources and technical/managerial publications. ISACA administers the globally recognized Certified Information Systems Auditor® (CISA®) and Certified Information Security Manager® (CISM®) certifications. The association hosts international conferences and training events, and publishes a leading technical publication, the *Information Systems Control Journal*.

ROI: In the three decades since its inception, ISACA has become a pace-setting global organization. ISACA's CISA certification has been earned by more than 38,000 professionals. Its CISM certification uniquely targets the information security manage-



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ment audience and was recently named by *Certification* magazine as one of the top 10 new certifications. More than 5,100 professionals have achieved the CISM designation, and CISM continues to grow in stature and influence.

"The business market has become truly global. Management and control over IT transcend geography, and, as a result, certifications that are internationally recognized are critical to ensure a consistent approach, background and skill set," Marios Damianides, CISA, CISM, and a partner at Ernst & Young LLP, told

Certification magazine in January 2004. ISACA provides that consistency in IT management and control not only with its global certifications, but also with its highly regarded standards, research, educational opportunities and membership program.

CUSTOMERS: ISACA recognizes that it must provide products, services and benefits to the wide range of IT professionals who work to ensure reliable information and systems. ISACA's constituency includes IS auditors, IT security managers, academics, consultants, internal auditors, CIOs, external auditors, CEOs and a host of others.

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hosts in need of software patches but tend not to help administrators figure out what to fix first, since they can't incorporate IDS scans and predictions.

Some IT security solution providers are addressing these weaknesses with integrated threat management solutions that combine key elements in point security solutions.

One example: Securify Corp. of Cupertino, Calif., whose solutions address overall infrastructure security. Under Securify's approach, a traffic-policy engine inspects all network traffic, classifying it as either good or bad and giving administrators a complete, real-time view of network-security status. This information is then integrated with IDS and

vulnerability assessment functionality to pick up on attacks, anomalies and weaknesses.

Updating security infrastructure

Thanks to the Internet, old approaches to enforcing static network-security perimeters are giving way to newer, more dynamic ones. Organizations need dynamic infrastructures able to automatically enforce security policies enterprise-wide by:

- **Limiting users to the resources they're authorized to access.** This policy makes it easier to lessen the risk of data exposure and minimize the impact of attacks.

Informing your non-IT colleagues about the risks of poor security is just as important as keeping your own staff up-to-date on the subject.

- *Continually monitoring traffic for both policy violations and threats.* This practice makes it simpler and less costly to sustain business continuity because threats can be more quickly spotted, contained and addressed.
- *Screening devices and users.* That means verifying credentials and scanning devices for policy and configuration compliance as well as the presence of threats (such as viruses) before granting access.

Currently, several initiatives aiming to build solutions that screen devices and granularly enforce security policies are in various stages of development. These include Cisco's Network Admission Control (NAC) access management, Microsoft's Network Access Protection (NAP), and the Trusted Computing Network (TNC), from an industry alliance—the Trusted Computing Group—that includes such vendors as Symantec, Trend Micro, Network Associates, and Juniper Networks.

Meanwhile, companies such as San Francisco-based Vernier Networks, offer network access-management appliances that complement firewalls and can be deployed at the network edge.

Incorporating encryption

Regardless of the kind of network you operate, encryption technology can help you stave off network attacks, especially when used in concert with strong authentication, firewall, intrusion detection and security-assessment technologies.

It's true that even encrypted information can be captured by attackers. But actually deciphering that information requires the right encryption key. In addition, crypto-based authentication typically frustrates hijackers because the data being illicitly inserted can't be properly authenticated.

You can strengthen security by injecting encryption into multiple network layers or adding it to hosts, switches and so on. To maximize security at the links between your corporate systems and your network access points, you can implement encryption safeguards so that information is secured before it gets sent out onto the open Internet or into a partner's intranet.

Encryption solutions provider Safe Net Inc. of Belknap, Md., recommends taking the following steps to minimize encryption deployment risk and cost:

- Opt for federally-endorsed (NIST, ANSI) security strength, such as Triple-DES.
- Integrate public key infrastructure (PKI) technology for strong authentication and digital certificates.
- Plan scalable network and security management systems if your enterprise runs large networks with thousands of nodes
- Use carriers that offer a secure ATM or frame-relay public data network service.
- Build solutions that integrate ATM or frame-relay with IP solutions to ensure that your security policy evolves in response to your business needs.

Staying on track

The daily bombardment of new threats and vulnerabilities—a new virus, another round of “phishing,” spyware-laden spam attacks—can drive CIOs and their staffs to distraction. So it's important to maintain your focus on what matters most.

“We desperately need to pay more attention to assessing risk and vulnerability, and measuring security,” says Phebe Waterfield, CISSP, senior analyst for The Yankee Group, the Boston-based research and consulting firm. “We cannot manage what we cannot measure.”

Informing your non-IT colleagues about the risks of poor security is just as important as keeping your own IT staff up-to-date on the subject. “Once non-IT managers and staff are educated about security, they become much more effective at identifying security risks in their own processes and projects,” observes Betty Johnson, vice president of information technology at The Nonprofits Insurance Alliance Group of Companies, which provides liability insurance for charitable nonprofit organizations.

Annual security audits and penetration testing conducted by outsiders can also help stave off disaster. “This testing validates existing security controls, exposes security weaknesses and offers the opportunity for immediate remediation,” Johnson points out. “Choose a vendor that is a recognized leader in the field of security testing. And take the time to perform due diligence—that is, research scope, check references and so on, before initiating a service agreement.”

Above all, be honest. Don't try to skirt the real issues regulators are targeting: privacy, identity theft and fraud. Says Waterfield: “It's tempting to aim to pass the audit with as little effort and cost as possible—but it's important to tackle the issue with ethics and integrity.” **CIO SL**

VENDOR INNOVATION SNAPSHOT: **ITGI**

Ensuring Effective IT Governance

SOLUTION PROVIDER: The IT Governance Institute (ITGI) was established in 1998 to advance international thinking and standards in directing and controlling information technology. By hosting conferences and offering original research and case studies, ITGI assists enterprise leaders and boards of directors in their responsibilities regarding IT governance. ITGI helps ensure that IT is aligned with business objectives, delivers value, is measured, mitigates risks and is properly allocated.

PRODUCT AND SERVICE OFFERINGS: To provide guidance to organizations of all sizes and industries around the world, ITGI developed Control Objectives for Information and related Technology (COBIT), the internationally accepted framework for control over information, IT and related risks. Other ITGI publications include:

- *COBIT Security Baseline*
- *Board Briefing on IT Governance, 2nd Edition*
- *Information Security Governance*
- *IT Control Objectives for Sarbanes-Oxley*
- *IT Governance Implementation Guide*

ROI: According to the *IT Governance Global Status Report*, more than 91 percent of executives recognize that IT is vital to the success of their businesses—but more than two-thirds of CEOs aren't comfortable answering questions about governance and control over their IT processes. That's the case despite the

impact of the Sarbanes-Oxley act and increased scrutiny worldwide focusing attention on the IT processes that underlie financial systems.

According to the *Global Status Report*, companies that place IT on the board agenda reported:

- Better measurement of IT performance
- Better management of risk and IT resources
- Better delivery of business value through IT
- Better alignment of IT with company strategy



CUSTOMERS: IT governance activities are implemented by international businesses, government entities and other organiza-

tions. Case studies focusing on specific implementations are available at www.itgi.org. Organizations profiled include:

- Allstate Corp.
- Charles Schwab & Company
- Ernst & Young AG/Switzerland
- Datasec, Uruguay
- U.S. House of Representatives
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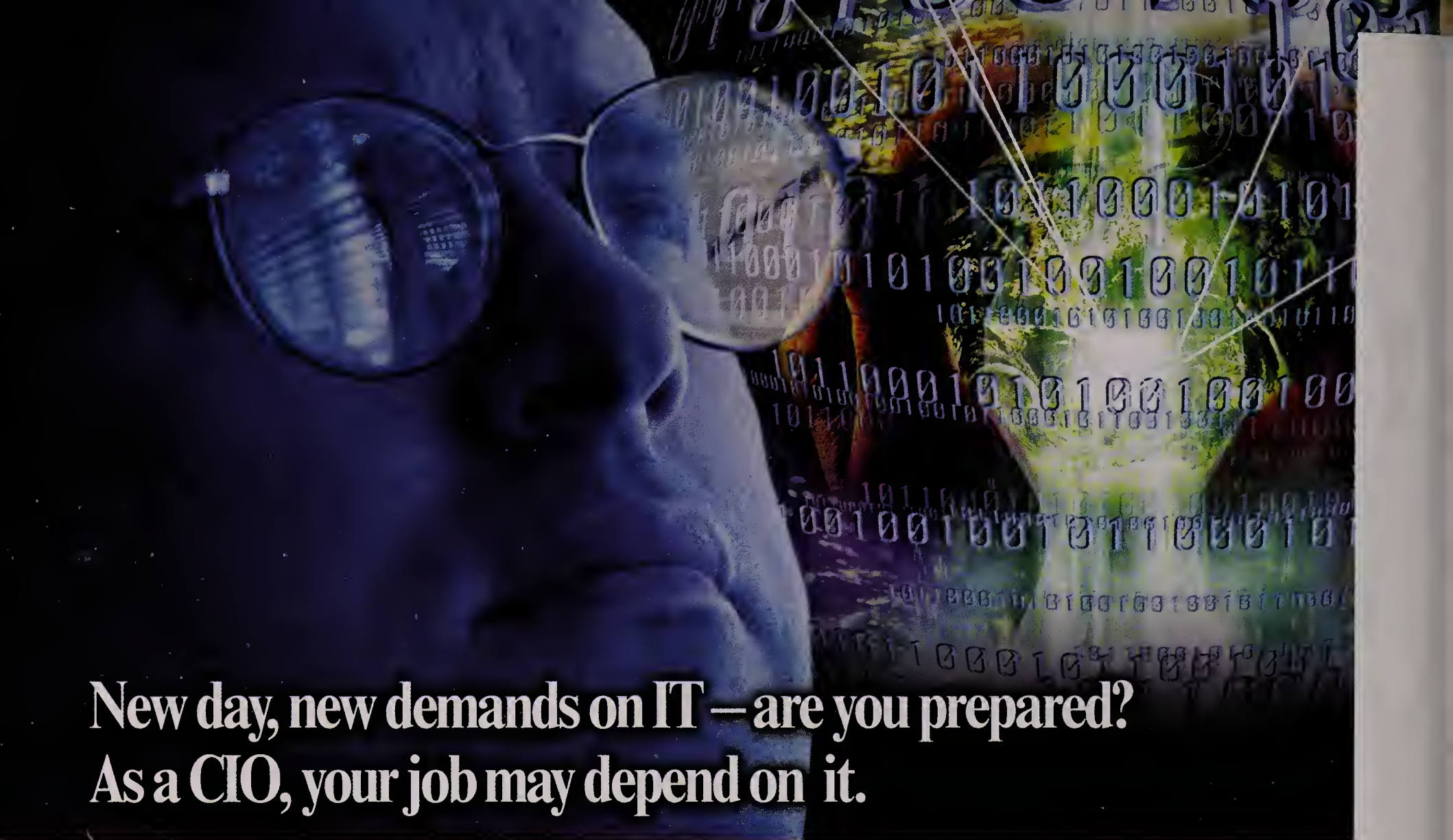
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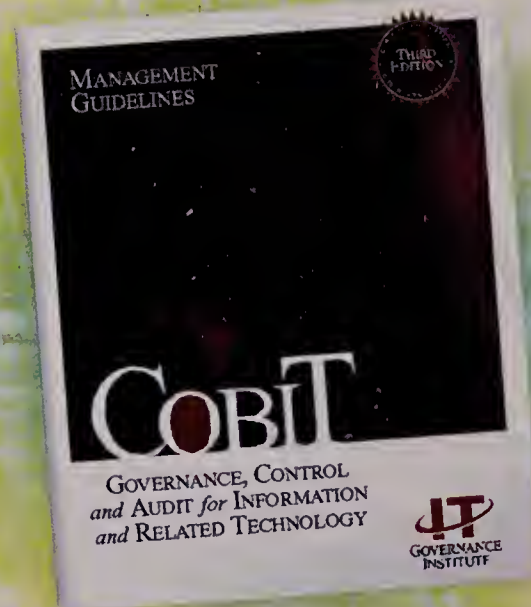
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- *IT Control Objectives for Sarbanes-Oxley*, offering a road map for compliance with this critical legislation
- *Board Briefing on IT Governance, 2nd Edition*, outlining definitions, best practices, roles and responsibilities for IT governance
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sales cover 65 percent of the headquarters' operating expenses, that was a problem.

A ROAD MAP FOR TRANSFORMATION

The 1,100-person staff at AG headquarters is brimming with passionate, well-intentioned people, many of whom took pay cuts to work there. (The fact that Strathdee has been there nearly 28 years doesn't raise an eyebrow.) Yet, a stovepipe mentality ("kingdom-building" in AG terminology) was crippling the organization's ability to respond to the business challenges it faced. "People did not talk to each other," says Harold Sallee, assistant to the general superintendent. "I don't mean they didn't trust each other. They were so passionate about what they were doing, they just went along and did it."

Communication suffered; duplication of efforts (including multiple purchasing functions and editorial groups) was rampant. The cost-plus budgeting process, which many managers delegated to their subordinates, exacerbated the problem, since there was no mechanism to review whether existing programs were worth sustaining. Once funded, most programs were simply continued.

Frustrated by his inability to climb out of the maintenance trap and meet requests to fund new development, Strathdee called Meyer, author of the activity-based costing tract that had piqued his curiosity. But the conversation surprised him. After Strathdee described AG's broken budgeting process, Meyer quickly (and correctly) surmised that there were deeper issues: The organization was stuck in maintenance mode, even flirting with irrelevance. He suggested that AG step back and look at these larger problems.

The organization was, in fact, attempting to do just that. Trask had launched a Vision for Transformation (VFT) effort in 1998. After AG churches arrived at a common spiritual vision for the church, the VFT focus turned to a review of headquarters' operations in spring 2002. The review committee "met, and frankly, we didn't know where to start," says Strathdee, a committee member. "So we just scheduled another meeting for later." But after his conversation with Meyer, Strathdee introduced Trask and other top executives to Meyer's

The Five Facets of Every Organization

How to use a "systems thinking" framework for leading change

Underlying the organizational change effort at Assemblies of God (AG) headquarters is a model from systems thinking, a theoretical approach to analyzing how interactions between parts of an entity affect overall performance. Dean Meyer, the organizational consultant retained by AG, uses a five-part systems thinking model. A tenet of systems thinking is that an organization's parts must be in balance. A weakness in one area can throw off performance, even if the other areas function well.

1	2	3	4	5
Culture: an organization's behavioral patterns	Structure: job functions, reporting relationships and workflows	Internal economy: budgeting and other resource management	Methods and tools: procedures, skills and tools that people use	Metrics and rewards: incentives for performance

RoadMap process. They soon decided it was the blueprint for VFT.

Meyer's RoadMap is a diagnostic based on systems thinking (see "The Five Facets of Every Organization," this page). The RoadMap helps organizations document a clear vision, analyze the gaps between vision and reality, diagnose the root cause of problems and then outline a leadership plan to achieve the desired outcome. By January 2003, Meyer had signed on as a consultant, and the VFT committee had changed its name to the RoadMap Process.

A VFT design team, comprising 42 managers from all functions within the organization, began by soliciting input from employees on how headquarters operated. Just over half, about 600, participated at several gatherings that spring, which Sallee characterizes as "good venting sessions." Breakout sessions on hot topics allowed for deeper discussions, and every single comment was documented on a Post-it note. Sallee would later invite employees to e-mail their concerns to culture@ag.org. He says the first batch of e-mails was "vindictive and hurtful," but employees toned it down after he asked for more constructive criticism.

The design team reviewed all comments, pulling from them five particular trouble spots: partnership with customers (both internal and external), resource management, product design, operational services and people management. They mapped every Post-it note to one of the challenge areas.

Meyer led the design team in a root-cause

analysis. One thing jumped out most of all from the Post-it notes: AG's organizational culture was holding it back. "The people there are very, very sincere. They felt called there to run their ministries," explains Meyer (who is not a member of the AG faith). "But since they were called, they felt it was up to them to sort out what to do as opposed to serving customers who'd tell them what they wanted."

Ironically, the extreme cordiality of the staff (a.k.a. Midwest Polite) was part of the problem. "Sometimes being polite to one another can be detrimental," Meyer says. "Organizations may avoid conflict to the point of not resolving issues, or will even tolerate ambiguity and go their separate ways." So instead of a culture of teamwork, there was too much kingdom-building and too little communication, often resulting in duplication of efforts and inefficient use of resources.

In the fall of 2003, the design team decided to focus on transforming the organizational culture and structure. The goal was to revamp AG's internal structure to match its external goals. A parallel effort to improve AG's resource allocation methods addressed the shortcomings of the cost-plus budget process by initiating Meyer's version of activity-based costing.

ORGANIZING CULTURE AND STRUCTURE FOR TEAMWORK

Strathdee says the RoadMap team was nervous at first about a cultural makeover, because

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it's hard to change people's feelings and opinions. But Meyer encouraged them to focus on behaviors rather than attitudes. "When we thought of culture as behaviors, we thought, We can address this," Strathdee recalls.

The team worked its way through a list Meyer compiled of 13 cultural principles common to effective organizations, including good interpersonal relationships, integrity, teamwork and making commitments that can be kept. They modified them to align with AG values. (Instead of respecting the devil's advocate, for example, the AG version rec-

flows, began meeting in early 2004. After studying Meyer's building blocks for organizations, the committee proposed a new configuration for the top reporting relationships at AG.

Enterprisewide structural changes have yet to be made, but Strathdee has already applied some of Meyer's advice within the IT group. Meyer recommends coordinating around specialties instead of around products; Strathdee separated network services personnel (engineers and architects responsible for innovation) from operations cen-

development costs as he's preparing his budget, he says. "This year, for the first time, I actually have some venture items in my budget that are not based on the last 12 months, but based on things that departments want to do."

A portion of everyone's salary will ultimately be determined by deliverables, giving managers a strong incentive to look more carefully at how their employees are spending their time, Strathdee says. Working through a BBD worksheet led him to conclude that he needs 102 IT employees. (He's now got 94.) He can see precisely which deliverables are stretching his staff; two more programmers were recently added to the current 18, for example.

After identifying deliverables and the resources needed to deliver them, Strathdee's next step was to "sell" those allocations to departments at a budget prioritization meeting in early January. "I went into the meeting with a lot of apprehension about defending our charges [for IT services], but that isn't how the meeting went at all," he says. Not only did managers purchase all of the IT deliverables offered but some found out about services that IT had been providing to other departments and wanted to buy them.

"Our ultimate goal is to have a scenario where managers can have some choice in what services they are buying from us," he says. Departments should be able to get nightly backup of sensitive corporate data on a remote desktop, for example, as long as they're willing to pay a premium. Strathdee knows that making people accountable for the costs of the services they use will encourage thriftiness.

Sallee says the new budget process will lead to major cost savings. But that's not the biggest benefit from AG's organizational revamp. "The most important thing is that 10 to 12 of the key managers will sit down and develop priorities. We'll have more meaningful, open dialogue, but it will be collective rather than individual," Sallee says. And for an organization once known for kingdom-building, a collaborative approach is something of a miracle. **CIO**

Senior Editor Alice Dragoon can be reached at adragoon@cio.com.

"This year, for the first time, I have some venture items in my budget that are not based on the last 12 months, but on things that departments want to do."

**-TIM STRATHDEE, CIO,
ASSEMBLIES OF GOD HEADQUARTERS**

ognizes "those presenting contrary views.") The resulting 42-page document, which is interspersed with supporting biblical quotations, outlines specific behaviors that are expected of all AG employees.

That kind of cumbersome document is hard to read to the end, much less inculcate into an organization. But in AG's case, a teaching team rolled out each principle in mandatory one-hour sessions every three weeks. By November 2004, the culture change rollout was complete, and Strathdee and his colleagues were already pointing to benefits, such as more productive meetings and better communication among managers.

Sallee says one major impact of the culture effort is that AG's executive suite is more open to dialogue. "We've always had an open-door policy, but people now feel like they can really go to that open door," he says. At the Gospel Publishing House, the new atmosphere of teamwork has made it possible to roll out new products, such as a Christian comic book line and a sports camp curriculum, in record time.

A subcommittee on organizational structure, charged with recommending an ideal structure for AG and reviewing its work-

ter staff (charged with maintaining the system that automates the warehouse and shipping processes). "When you group people by specialty, their stress level goes down," says Strathdee. "You can't ask a person to innovate *and* make sure the network never goes down.

BUDGETING FOR VALUE

The concept underlying activity-based costing is straightforward: Desired outcomes and deliverables are quantified and listed on the budget. AG kicked off the effort to discard its old cost-plus budgeting mentality in January 2004, when Gospel Publishing House adopted Meyer's Budget-by-Deliverables (BBD) approach. For the 2006 fiscal year budget, more than half of the AG headquarters will be using BBD, which builds budgets based on the cost of specific deliverables as opposed to traditional line items such as travel or training, says Clyde Hawkins, administrator of AG's Division of the Treasury.

Strathdee already sees a difference in the budgeting process. Managers are proactively calling him about their plans for the coming year so that he can factor in new

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Mastering the Secret Etiquette of GOLF



Advanced COMMUNICATIONS

"Mastering the Secret Etiquette of Golf" is third in an occasional series titled **Advanced Communications**. These articles feature practical advice designed to help you improve the communication skills you need to succeed as managers and leaders.



Tiger Woods may have nothing to fear from you, but you still have to know the (unwritten) rules of the game

BY THOMAS WAILGUM

You may golf well.

Or, you may stink up the course every time you put on your soft spikes.

But one thing is certain: Golf outings are as integral to corporate life as board meetings, annual reviews and holiday parties. And if CIOs want to play along, they have to know the subtle points of the game—not necessarily the rules or basic playing techniques but how to behave on the course and avoid perpetrating the cardinal sins of golfing etiquette.

Among the most egregious missteps: There's lying, of course. People lie about their scores; they lie about their handicaps; they lie about their lies.

There's rudeness—such as moving when someone is teeing off, talking when someone is about to swing or casting your shadow where someone is putting.

There are errors of omission: failing to rake sand traps, fix ball marks on the green or replace divots in the fairway.

In fact, that serene golf course can actually be a minefield where CIO careers can be made or broken if you happen to believe—as many golfers do—that the sport reveals a person's true character. "Golf tells

no lies," says Suzanne Woo, founder of BizGolf Dynamics, a company that helps executives better understand the nuances of the game. Golf, she says, "puts you under this weird pressure and expectations—and in this competitive mode."

In such a pressure cooker, CIOs need to be prepared for all types of situations on the links—including strategies for dealing with a cheating CEO who's giving you the nod and wink, or a pushy vendor who wants to monopolize the conversation with talk of business. "You learn more about a person in four hours on the golf course than you can possibly learn by only having business meetings," says David Guzman, the former CIO of Owens & Minor who's now chief research officer of The Yankee Group. "No matter how you try to be on your best behavior, your true personality will emerge on the golf course." But CIOs need to watch themselves as well. They are representatives of their companies, and any unprofessional behavior could kill future business deals or crimp their career plans. "If you are acting like a buffoon or cheating, the word will get out," says Woo. "And it won't bode well for you or your company."

First Things First

Among business golfers, the most debated topic is whether or not players should even talk business. CIOs and business golf experts advise to leave that up to the other people in your foursome—whether it's a vendor salesperson, your boss, your biggest customer or your CEO. "Your customer may use the golf course to ask you a question that's very important to him, and which is equally important for you not to fumble," Guzman says. Of course CIOs should answer, but they should keep it short. "Even when given such an opening, do not use it to drive a Mack truck of business through it," Guzman says. "Simply answer the questions and go immediately back to the casual camaraderie."

Expectations Management

A little bit of communication before a round can help CIOs set and manage the group's expectations for the day. Whether you are the host or the guest, make sure you find out about the expectations and abilities of the others in your group before you head out to the first tee. What are their handicaps? Do they even have one? Are they serious about their games? Or do they consider themselves perennial duffers who just like the outdoors? If CIOs are more interested in "shooting a number" (golf speak for serious playing) than hearing about a vendor's latest product release, they need to make that clear up front. "If the sales guy hits with a

pitch on the first hole, it's fine for CIOs to be able to say, 'Let's focus on golf, and we'll talk business at the 19th hole,'" says Woo, referring to the watering hole at the clubhouse. And a good salesperson should always accommodate his CIO guest. "It's not rocket science," says David Collins, a PGA professional and owner of The Business Golf Academy, a company that helps salespeople interact better with clients on the golf course. "If all the sales guy wants to do is talk business, that's not a good sign [for the CIO]."

Playing with the Boss

A CIO who is invited out for a day on the links by the CEO, CFO or other senior executive had better be prepared for anything. After all, those executives may be thinking about about promoting him or testing his psychological makeup, or maybe they simply want to get to know him better. "If you're ever invited to go and play with the boss, it's a job interview," says Roger Ham, former CIO of the Los Angeles Police Department and a veteran of many corporate and business outings. "That three-foot putt is the longest yard in business, and it will show them your skills, your tenacity, whether you have good sportsmanship, and whether you can lose with grace and win with grace."

An old golf adage says that golf matches are won and lost on the first tee. Translation: Perceptions are everything on the golf course, and CIOs need to be aware of their

body language—whether you're having the best or worst day of your life. "You do form opinions of people on the course," says Guzman. "Are they confident and comfortable with themselves? Are they extraordinarily nervous or calm in a stressful situation? Are they too hard on themselves?"

One thing business golf experts universally advise against is tanking a match in an effort to land in your boss's good graces. "If you get caught throwing the game, it will be more embarrassing to yourself and more career-damaging," says Bill Storer, president of Business Golf Strategies, a company that sets up golf outings and seminars for businesspeople. "You ought to be worried about what your CEO is thinking at all times." Besides, Storer adds, if you are a great golfer, most people would want to play with you and see you score well—as long as you're humble about it.

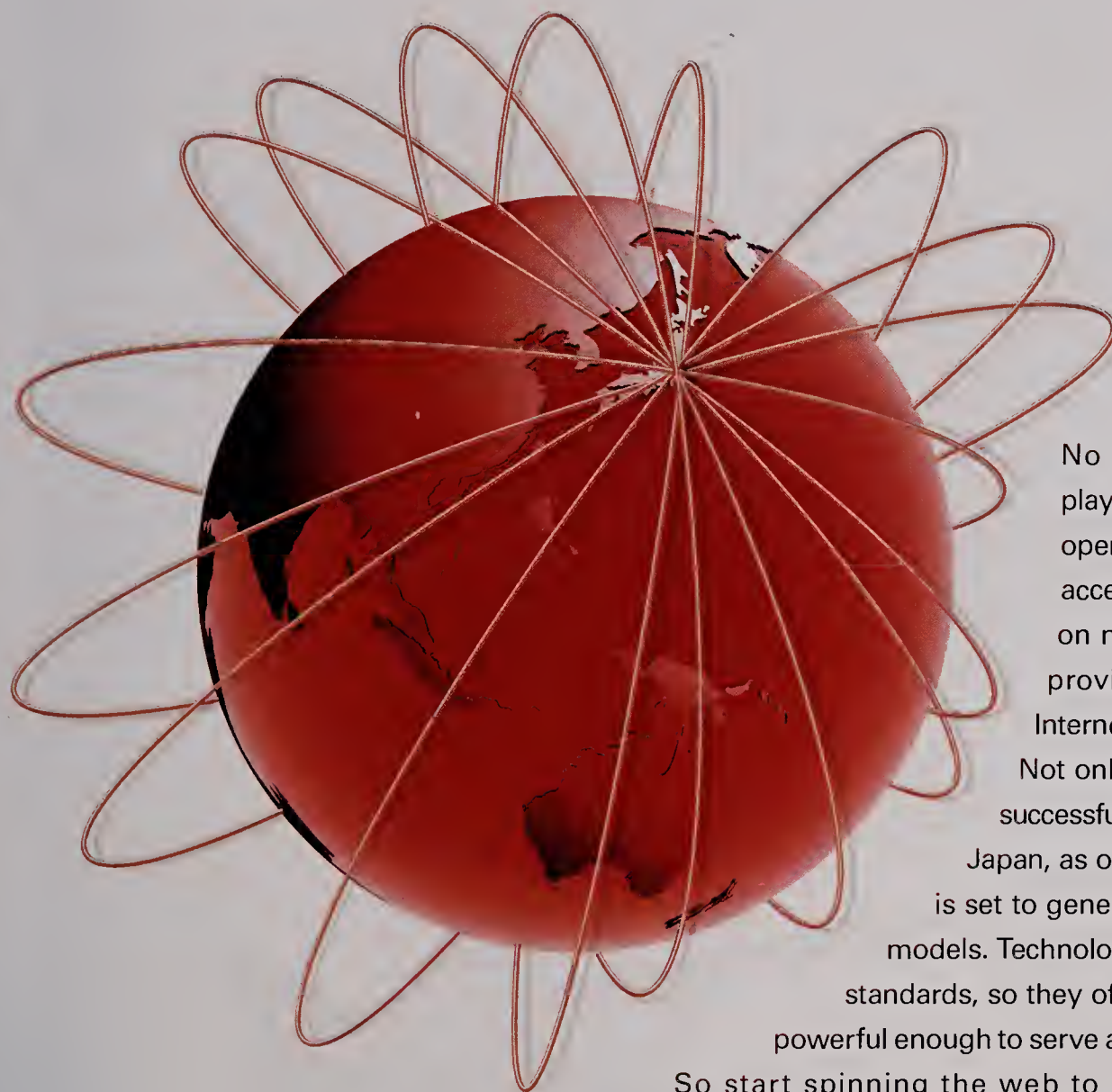


How to Respect the Game

Course manners are just as important as the basic rules. Here are 10 points of etiquette that apply from tee to green.

- 1** Never talk while a fellow player is teeing off. **2** Take only one practice swing in the tee box. **3** Remain in the tee box until everyone in the foursome has teed off. **4** Always replace your divots in the fairway. **5** Don't slam your club into the ground. **6** Be ready to play at all times (a.k.a. play "ready golf"). **7** Rake the sand trap after every bunker shot. **8** Fix your ball mark on the green. **9** Don't walk or cast a shadow in another player's putting line. **10** Pick up your ball for the hole once you have reached double bogey. —T.W.

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If You Cheat, You're a Cheater

While it's OK to exaggerate or underestimate your golf skills, outright cheating is just plain wrong. Many knowledgeable golfers have a sense about how many strokes you have taken per hole and can spot a cheater early on. "People think they're being subtle about cheating," says Guzman. "And cheating may be an indicator of how they will behave in other circumstances." CIOs who witness cheating by a member of their foursome shouldn't hesitate to bring it to the attention of others in their group, so long as the group consists of peers. However, Woo advises CIOs to think twice if the cheater in their midst happens to be a CEO, CFO or other senior executive; cheating is indicative of some degree of dishonesty, so CIOs might wonder how trustworthy their bosses are.

Lose the Cell Phone

The current hot-button issue in the golfing world is mobile technology. While some golf courses have banned the use of cell phones on the course, many golfers still take and make calls between shots. "If you think of it as a business meeting, it's incredibly rude," says Woo. Perhaps you have to make an

important call, especially if you're golfing during normal business hours. The best bet, says Woo, is to warn other players in your group that you may have to use your cell phone, and then try to do so when it's most considerate—such as at the snack bar often located at the ninth hole. Above all, common courtesy dictates turning off your cell phone's ringer so that it doesn't sound at inopportune moments—such as when your CEO is attempting a match-winning putt.

Scott Hicar, CIO of storage vendor Maxtor, finds other devices such as BlackBerrys to be equally distracting. He once watched in amazement as a playing partner (a fellow IT exec) at a charity tournament spent most of his time on his BlackBerry. "On the tee box, he was clicking out e-mails, and his thumbs were twiddling away as we were hitting," says Hicar. If you're that attached to your BlackBerry—and the office—what's the point in even playing? Your miserable day will ruin the experience for everyone else.

The key to any successful business golf outing lies within the participants and their willingness to use the time to solidify friendships and enjoy social relations in a relaxed atmosphere. But don't presume you'll discover business nirvana simply because

you're on a picturesque golf course on the company's dime. "You should never believe or behave in a way in which you think you are owed business because of a golf outing," says Guzman. "This is an investment in your relationship regardless of whether there are any immediate business results."

And just because you've heard "business gets done on the golf course," don't bother with the game if you detest it. The investment of your time and psyche is just too great. "You won't be able to get away with saying you love it when you are hating every minute of it," says Woo. Which is the reason why golf bonds businesspeople like few other interactions. "You know each other's pains and each other's victories," says Woo. **CIO**

Staff Writer Thomas Wailgum can be reached at twailgum@cio.com.

Be a Player

Or just look like one. No, in this case, you'd better **Learn the Game**. Go online to find resources to learn how to play as well as a short quiz for those of you who think you know the game. OK: Are you allowed to spit on the face of your golf ball? Go to the online version of this article or to www.cio.com/040105 for the link to "Learn the Game."

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Get the Biggest Bang for Your SAP Buck

While most CIOs would tell us that ERP implementations are old news, the CIO Executive Council fields more questions from its members on ERP (SAP in particular) than on almost any other topic. Training, upgrades, global deployments. You name it; CIOs want to hear it. And they're interested in learning how best to eke out as much ROI as possible. Last fall, the Council hosted a teleconference during which members (all running SAP) traded tips, best practices and lessons learned on various topics. These lessons apply not only to SAP deployments but to most enterprise projects.

1] Go with the best. A project as critical as ERP needs full participation from the people in the business who know their processes better than anyone. But the best people tend to be the busiest. "It is tempting for the busi-

ness to assign the most available people instead of the best," says Virginia Guthrie, CIO at Coors Brewing. "So I need to tell the CEO that without the right people, I do not advise we go ahead with the project. It's better to delay it than have the wrong people on the job."

2] Customize training.

Bob Wittstein, CIO of Sappi Fine Paper North America, learned the hard way the value of training. At a former company, he had invested a great deal in classroom training for his customer service staff so that when the go-live date arrived, they would be comfortable with the system. But when the system was deployed, it had changed significantly since training. The new screens generated some confusion for the staff. Wittstein now mixes traditional classroom training

with actual practice sessions in a go-live environment.

3] Dedicate people to change management. ERP is much more than a new technology; it is a major change in the way people do their jobs. Never underestimate the amount

of cultural havoc such change can wreak on an organization. Walter Weir, CIO at the University of Nebraska, uses a dedicated change management team—made up of training specialists, documentation specialists, technician support positions and a change



BOB WITTSTEIN

management leader—to work closely with the SAP implementation teams and campus change management representatives to filter information to the users. Changes that affect all users—such as new features, functions, bug

Continued on Page 106

How to Hire and Manage a Consultant

A consultant can make or break an ERP deployment. Therefore, hiring well and managing even better is as critical as any other part of the project. Council members offer their advice for selecting, hiring and managing a consultant.

- ☐ **SPECIALIZATION IS BEST:** Hire different consultants for specific modules and the skills required. Use these experts to fill in the skills that you lack on your internal staff.
- ☐ **GLOBAL PRESENCE:** For global projects, select consultants who know the specifics of particular regions.
- ☐ **AVOID THE YES-MAN:** CIOs and their business peers think they know it all; a consultant has to be able to challenge established thinking and influence behavior.

- ☐ **EMBRACE EARLY TERMINATION:** Make sure the statement of work allows for early termination. If a consultant is not working out, end the contract.
- ☐ **BUILD AN AUDITION INTO THE INTERVIEW:** Present the candidate with a real configuration scenario to test how he reacts and handles the situation.
- ☐ **KEEP MANAGEMENT IN-HOUSE:** Don't give up management oversight or projects to consultants.
- ☐ **WATCH EXPENSES:** Does every consultant need his own rental car? Do acceptable lodging arrangements translate into the university hotel or long-term apartments? Reviewing these expenses will help keep the consulting budget from breaking the bank.



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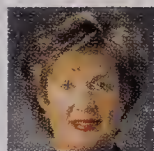
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Q:

In what order should you upgrade specific SAP modules? Why is this considered the best strategy?

And what effect does it have on a successful upgrade?



A:

VIRGINIA GUTHRIE,
CIO, Coors Brewing Co.

We have implemented 80 percent of SAP modules and have created a staggered upgrade strategy. For those modules that have less process and fewer users—such as business

information warehouse and advanced planner and optimizer—we upgrade every 18 months. Modules that are important but will not affect our ability to make, ship and sell beer are upgraded every three years.

Lastly, for the core modules, we upgrade every five years due to the disruptive nature of an upgrade. We have found that this strategy works well with the business, is less onerous and is less costly than a “big-bang” upgrade.



A:

BILL HASER,
CIO, Tenneco Automotive

Within the main ERP system, I would never consider a module-by-module upgrade, as SAP is not set up this way. However, we purposely deployed the HR module on separate servers so that it

can be upgraded independently of the main system. If you think you will need to upgrade different modules at different times, then you should consider a similar implementation strategy.

[ONE::LINER]

“SAP is a living, breathing monster. You don’t implement it and then walk away.”

—WALTER WEIR, CIO,
UNIVERSITY OF NEBRASKA



GET THE BIGGEST BANG FOR YOUR SAP BUCK, Continued from Page 104

fixes and changes in business processes—are communicated to the user community through the centralized group so that a consistent message is delivered, improving the adoption of SAP and reducing the level of confusion and incorrect information received. Weir also posts a change management specialist on each of the four campuses to serve as contact points for campus-specific needs.

4] Customize tools to keep users educated. Weir customized a Lotus Notes-based application that helps users quickly locate information about specific rights and privileges, time lines, training sessions and the right contact person on the SAP team. This centralized, low-cost tool eliminates the need for the different campuses and departments to create, maintain and support their own change management technology and training sessions. Weir says users look to the tool for up-to-date information regarding changes to SAP and business documentation and details about new features.

5] Work strategically with your vendor. CIOs need to look at the vendor’s business from a strategic perspective, says Abbe Mulders, CIO and executive director of IT and KM at Dow Corning.

“We’ve done a lot of relationship-building with SAP to understand its strategy, goals and ambitions,” she says. “We also work to influence that strategy so that what goes into the next release, both technically and strategically, will help our business.”

6] Run plenty of tests. If you skimp on testing to make your go-live date, you may as well throw away your money. “All the training and change management practices won’t be enough to save a project that is deployed before testing is complete,” says Wittstein. He stresses the importance of data migration testing to validate that the data is perfect in the new system and of using metrics to catch bad data trends early in the testing period. Guthrie concurs: “Testing servers is cheap compared with an unsuccessful SAP go-live,” she says.

7] Build in an anchor. At Coors, Guthrie divides enterprise projects in two: the deployment itself and an “anchoring” project, complete with its own time line and budget, which exists primarily to do fine-tuning after deployment. “We plan for a second project after the first is locked down to do cleanup,” she says. “We’re investing a lot in the system, and we want to apply what we’ve learned to take care of any problems right away.”

8] Create a team of super users. Bill Haser, CIO at Tenneco Automotive, employs a super-user university concept in all divisions. He sees value especially in departments with high attrition rates where new employees mean more training. Super users learn the system inside and out and train others through ongoing sessions. These users answer how-to questions, develop best practices and identify additional training needs. As a result, the whole team suffers less knowledge loss when an employee leaves.

—Carrie Mathews, Member Services Manager, CIO Executive Council



ABBE MULDER



(VISIONARY)

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[EXPERIENCE BASE]

Managing the Management Team

In 1998, Scott Hicar, vice president of worldwide IT and CIO of Maxtor, implemented a single, worldwide instance of SAP for roughly 1,000 users. He put together a team of 20 people to drive the deployment and to own continuous improvement. That team now numbers 40 people and the number of SAP users has grown by about 50 percent. One business analyst and three or four IT staffers are dedicated to each major functional area of the company: financials, HR, materials and manufacturing, and sales and distribution. Each sub-team is responsible for ensuring that SAP (as well as all other applications) is delivering as much value to that part of the business as possible.

But what seems basic in theory is often harder in practice. Hicar offers three lessons:



SCOTT HICAR

1. Begin with functional alignment. When Hicar formed his team, he organized it functionally, but only around SAP. He dedicated other members from the IT staff to focus on non-SAP applications. Over the next four years, Hicar expanded the functional alignment to all of the applications that are relevant to each functional area. If he were to do it again, says Hicar, "We would move more quickly in broadening the scope of the senior business analyst to include all of the systems that that particular functional group uses." Why? The broader the technical responsibility of each business ana-

lyst, the smarter they get about the business.

2. Keep an eye on the midlevel relationship. When selecting IT people to head each functional area, Hicar suggests focusing on relationship skills as much as technology or business knowledge. "It's all about the relationship between the business systems analyst and the business unit manager," he says. "If that dialogue goes well, then my dialogue with the executive team will go well. It's not top down, it's middle up." He recommends weekly meetings between business analysts and business unit heads to review priorities and backlogs.

3. Hire business analysts who can sell. Marketing the achievements of an SAP investment is no easy feat, but a critical one. Hicar directs his team of business analysts to find some simple ways and basic metrics to market the business's ROI. "We have a new management team at Maxtor, and they are not as familiar with our accomplishments as the old team," says Hicar. "We wish we had developed a mind-set, from the beginning, around documenting our achievements, since we now have to double our efforts."

—Martha Heller,
Managing Director,
CIO Executive Council

ROLE PLAY

Critical Players

A successful SAP implementation depends on having the right team in place to manage the process, communicate with the business users and keep the project on track. Council members recommend having the following essential players.

● **Change management and training and documentation specialist:**

Conduit between business teams, users and IT to manage training

● **Project accountant:** Serves as the face of the project to the board; understands the business risk of this hugely expensive investment

● **Global business process manager:** Directs and prioritizes business process changes throughout the global organization

● **Enterprise SAP application architect:** Establishes and champions application architecture and development methodologies

● **Acquisition and implementation manager:** Manages ongoing maintenance and enhancements of specific modules; identifies user requirements and effects on other systems

To view full job descriptions, go to the online version of this article at www.cio.com/040105.

[ONE::LINER]

"The good news is that if you put a number in SAP, it goes everywhere in the business; the bad news is that if you put a number in SAP, it goes everywhere in the business."

—VIRGINIA GUTHRIE, CIO, COORS BREWING CO.



The CIO Executive Council is a professional organization for CIOs founded by CIO's publisher. To learn more about the Council, visit www.cioexecutivecouncil.com or contact Managing Director Martha Heller at mheller@cio.com or 508 988-6738.



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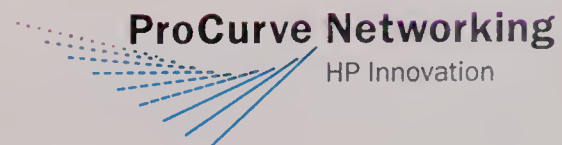
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Repeal Sarbanes-Oxley

American companies are spending valuable resources on compliance rather than competition



How much of your 2005 budget is allocated to meeting Sarbanes-Oxley regulations? The CIO Magazine Tech Poll reports that nearly half of the large companies surveyed will divert more than 15 percent of their budgets to Sarbanes-Oxley compliance. In an era of shrinking IT budgets, I ask, diverted from where?

I shared this figure with an audience in a recent speech and was met by a sea of heads nodding in disgust. Afterward, a CIO said, "I make a

lot of sales calls and never once have I heard a sales rep tout to a prospective customer that the reason we should do business is because we are more compliant than our competition."

That competition is coming from global companies. And while foreign companies are free to grab market share, U.S. executives are instead grabbing their Sarbanes-Oxley manuals to learn how to "continuously engage business managers and process owners in self-assessment training." Is Dr. Phil in the house?

Sarbanes-Oxley was a political overreaction crafted by two lawyers who never ran a business in their careers. While executives at Enron, Tyco and WorldCom (among others) have behaved criminally, most business executives who manage the more than 6,000 publicly traded companies are solid corporate citizens who honestly report the financial results of their companies. And now, thanks to two lawyer-legislators, executives spend more time with auditors than with customers.

Sarbanes-Oxley will hurt investors in the long run because it forces business executives to focus on policy development rather than product development. Moreover, Sarbanes-Oxley will offer investors fewer choices; CEOs of lightly traded public companies will opt off stock market exchanges to avoid unnecessary compliance expenses while their counterparts at hot private companies will remain private for the same reason.

Sarbanes-Oxley needs to be repealed. In a recent CIO.com poll, 49 percent of 463 respondents agreed. Make your voice heard. I will send all responses to this column to Sen. Paul Sarbanes and Rep. Michael Oxley. Write me today.

Gary J. Beach

Gary Beach, Publisher
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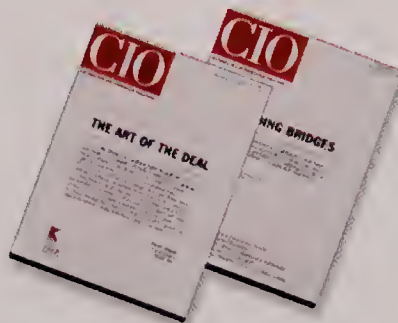
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SPECIAL REPORT: The State of the CIO 2005

42 | REALITY CHECK

AS A CIO TODAY, you're under pressure to reduce costs. At the same time, you're being told to use IT to innovate and create competitive advantage. Tough, isn't it? In this "State of the CIO" report, we hit the road to profile three very different CIOs, each working under different constraints. This immersion in the daily life of the CIO provides a window into the philosophy and mechanics of innovation and a reality check on the state of the CIO. In addition, we've included a new survey on innovation and the CIO's role in driving it.

By Elana Varon

52 | SLEEPLESS IN MANHATTAN

CONTINUOUS INNOVATION is Verizon CIO Shaygan Kheradpir's obsession. He manages his almost 9,000-person IT organization much like a grad-school lab, a fraternity of

62 | EVERYONE WANTS SOMETHING FROM KEN

FOR KEN ERDNER, vice president of technology and information services at Old Dominion Freight Lines, work means juggling the often contradictory demands of diverse constituencies. The owners like to run the company in their own way. But the shareholders expect not only a good return on investment but also a strict adherence to federal regulations. The president wants his company to be as technologically innovative as its Fortune 500 competition, but the IT department is supposed to do so on one of the industry's leaner diets. In this profile, we learn how Erdner copes and how he meets his company's rapidly increasing IT needs with relatively minimal resources, lots of hard work, a good sense of humor and a strong sense of purpose.

By Stephanie Overby

lethargy (endemic to government) that discourages innovation. He also worries about his staff's age: A quarter of his 145 employees will be eligible for retirement in the next two years. And then, there's money. Right now, Taylor has 10 unfilled positions because until recently he'd been operating under a hiring freeze. In this up-close profile, we see how Taylor battles for resources, tries to drive cultural change and convinces elected officials of IT's value in his quest to make Fulton one of the leading IT-managed counties in the nation.

By Allan Holmes

81 | THE IDEAL AND THE REALITY

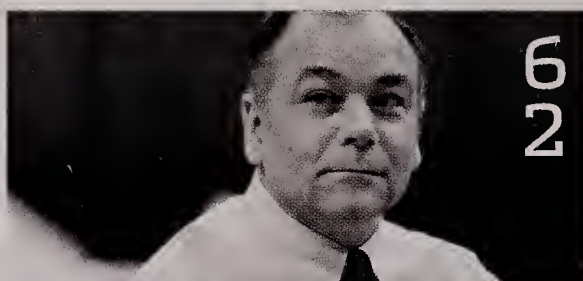
THE IDEAL CIO POSITION—the one that will bring the most benefit to the most companies—is defined by a set of responsibilities, accountabilities and essential skills. We've collected these elements and format-

52



Shaygan Kheradpir,
Verizon

62



Ken Erdner,
Old Dominion Freight Lines

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Robert Taylor,
Fulton County, Ga.

smart people who welcome the long, crazy hours developing Verizon systems and products. Equally demanding of himself, Kheradpir puts in 10 or 12 hours at the office and then goes back online from home every night for three or four more hours. To achieve Verizon's goal of being the leading provider of digital services to the home, Kheradpir has adapted a process borrowed from the venture capital world—fast prototyping in 30-day cycles. With this discipline, he can tweak products as they are being developed. By Alice Dragoon

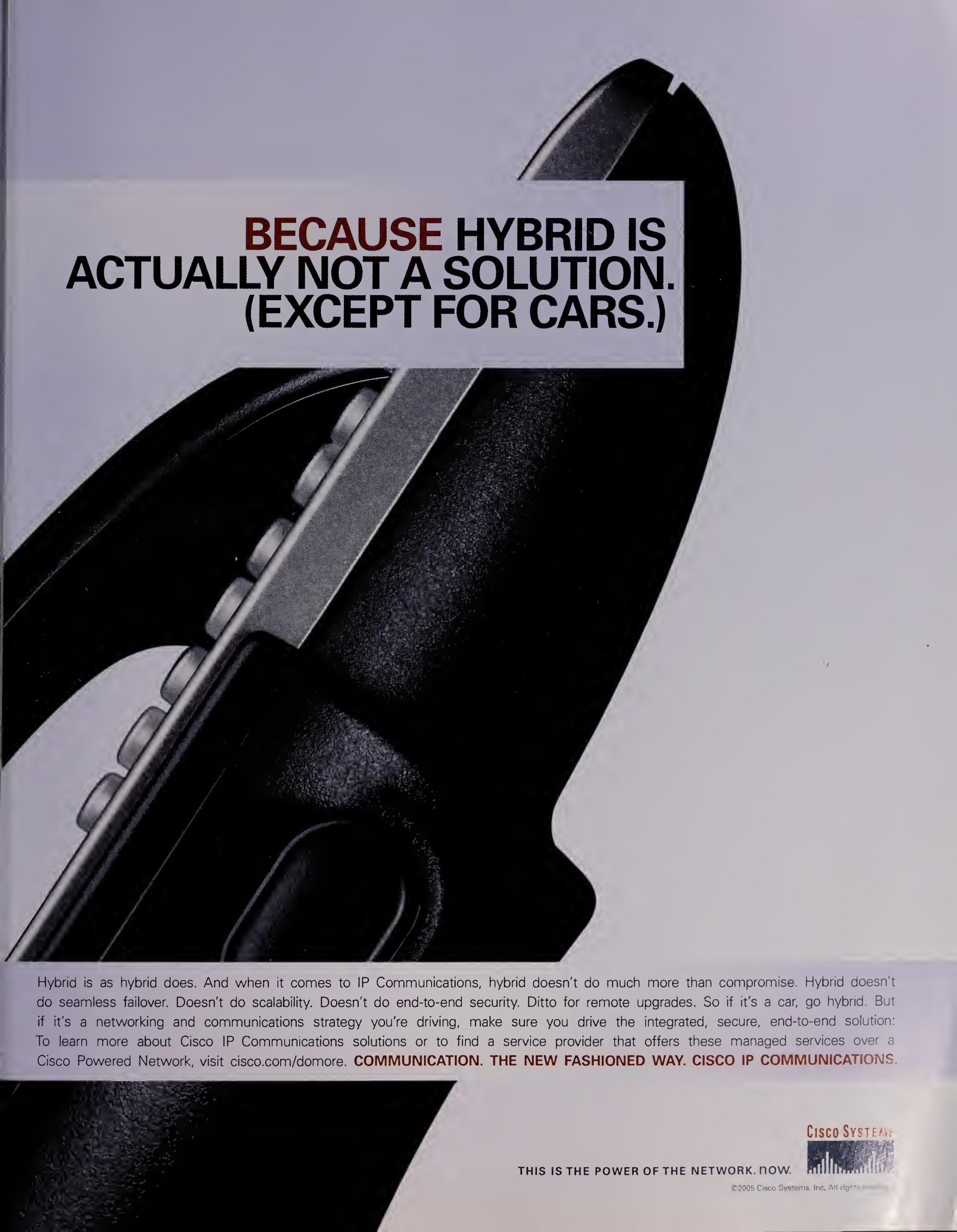
70 | WHERE THERE'S A PERSON, THERE'S A PROBLEM

ROBERT TAYLOR, CIO for Fulton County, Ga., has implemented the county's first IT security plan, updated and upgraded the county's hardware and software, and secured a seat at the county management table—the first Fulton County CIO to do so. But he worries constantly about the many people on his staff who lack project management and technology skills and suffer from the bureaucratic

ted them as a CIO "job spec" from a hypothetical company, drawing on data from many studies, and from extensive input from CIOs and executive recruiters.

It's one thing to know the ideal; it's another to see how you compare. So we've included a self-assessment test. See how you stack up against the ideal. IT leaders (and the executives who hire them) can use both the specification and the test as guides for assessing and refining the CIO role.

By The Editors



**BECAUSE HYBRID IS
ACTUALLY NOT A SOLUTION.
(EXCEPT FOR CARS.)**

Hybrid is as hybrid does. And when it comes to IP Communications, hybrid doesn't do much more than compromise. Hybrid doesn't do seamless failover. Doesn't do scalability. Doesn't do end-to-end security. Ditto for remote upgrades. So if it's a car, go hybrid. But if it's a networking and communications strategy you're driving, make sure you drive the integrated, secure, end-to-end solution: To learn more about Cisco IP Communications solutions or to find a service provider that offers these managed services over a Cisco Powered Network, visit cisco.com/domore. **COMMUNICATION. THE NEW FASHIONED WAY. CISCO IP COMMUNICATIONS.**

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